# e Iron NDEX TO READING MATTER

Review of the Hardware, Iron and Metal Trades.

ADVERTISEMENTS PAGE 28

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Hyatt's Circulating and Filtering Plant for Steam Boilers.

We recently had occasion to examine, at the works of the Newark Filtering Company, at Newark, N. J., a number of the several interesting designs of Mr. J. W. Hyatt for the purification of incrustation in steam boilers.

Obtained by him entitle the system to care full consideration. From the functions which the system to care full consideration. From the functions which the system to care full consideration. From the functions which the various feed water heaters and purifiers in the boiler itself. All possibility of any of the solid particles re-entering the boiler is, moreover, cut off by the filtering attachment. The pipe system further embraces through it is furnished by the feed pumps, while the solid particles re-entering the boiler is, moreover, cut off by the filtering attachment. The pipe system further embraces through it is furnished by the feed pumps, while the coils, mixes with the cold feed water in the space D. The mixture then passes on through the pipe B, which corresponds to the feed-under the solid particles re-entering the boiler is, moreover, cut off by the filtering attachment. The pipe system further embraces through it is furnished by the feed pumps, while the cold feed water in the solid particles re-entering the boiler is, moreover, cut off by the filtering attachment. The pipe system further embraces through it is furnished by the feed pumps, while the solid particles re-entering the boiler is, moreover, cut off by the filtering attachment which the various feed water which passes through it is furnished by the feed pumps, while the solid particles re-entering the boiler is, moreover, cut off by the filterior of the spring A, causes elonvation, in the boiler itself. All possibility of any of the solid particles re-entering the boiler is, moreover, cut off by the filterior of the spring A, causes elonvation, in the boiler itself. All possibility of any of the solid particles re-entering the boiler is, moreover, cut off by the f

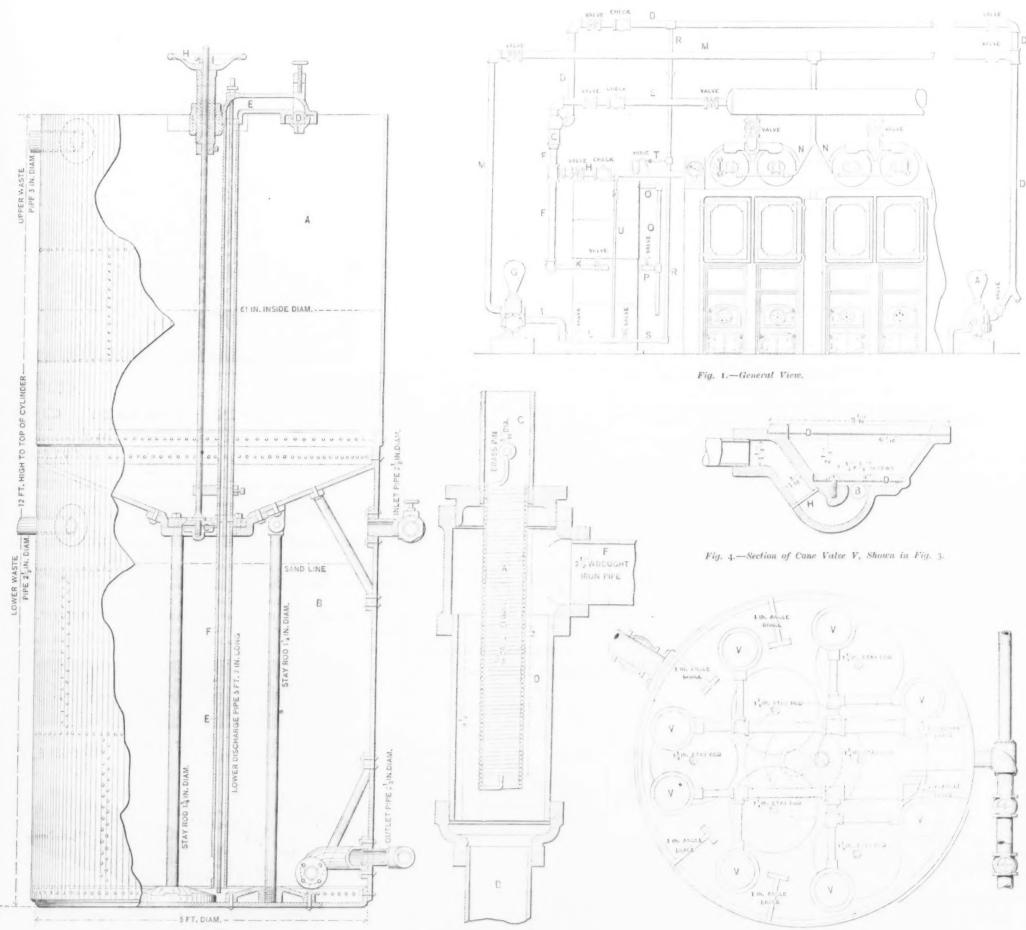


Fig. 2-Vertical Section of Filter.

Fig. 5 .- Section of Feed-Water Heater.

Fig. 3.—Transverse Section,

HYATT FILTERING AND CIRCULATING PLANT FOR STEAM BOILERS, DESIGNED BY THE NEWARK FILTERING COMPANY, NEWARK, N. J.

One of these we illustrate in detail on this page, and have no doubt that a careful age, and have no doubt that a careful of the arrangements adopted and of the theory of the arrangements adopted and of the theory of the arrangements adopted and of the theory of the system will prove both interesting and profitable. In a general way Mr. Hyat's circulating system can scarcely lay claim to novelty of conception, as the plan of effecting purification of water in a steam boiler by maintaining constant in a steam boiler by maintaining constant tried at various times, though often with last series at la familiar. Mr. Hyatt according the section in Fig. 5. The cold water enters through the boilers through the vertical branch C comes a supply of high-pressure steam from the boiler apassing from the heater and precipitator C to the feed-water meets the circulating supples from the boilers, flowing through the pipe H, from the boilers, flowing through the pipe H, and thence into the left, and delivers the water to a study of the material will not be presence of some chemical agent which is true in the case of the boilers. After of carbonate of lime, which is supply the water for the boilers, flowing through the pipe H, and thence into the left, and delivers the water to a sheater, C, of which a section is shown in that figure, where they are held.

If you have the boilers of the boilers of the boilers. After of the boilers through the pipe H, and thence into the left, and delivers the water to a sheater they are the steam to the left, and delivers the water to a sheater the plant of the feed water meets the circulating water to the feed water meets the circulating water to the feed water meets the circulating water to a passing from the heater and precipitator of the feed and supplied to the feed water meets the circulating water to a passing from the heater and precipitator of the feed w

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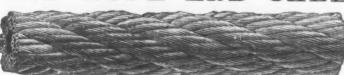
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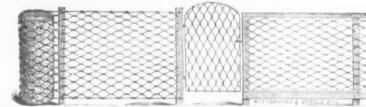
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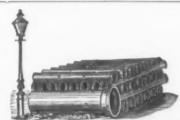
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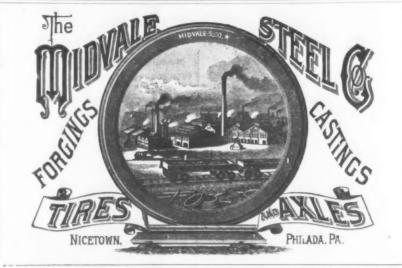
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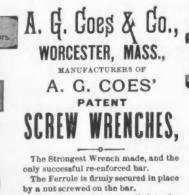
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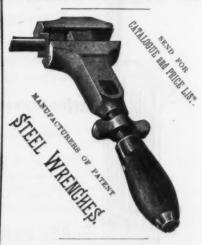
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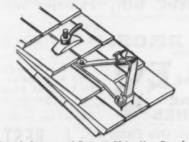
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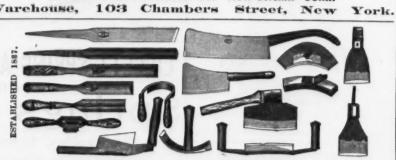


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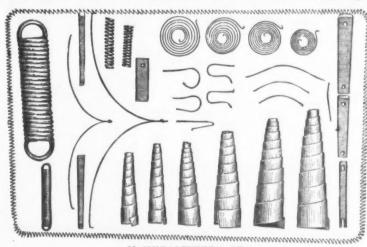
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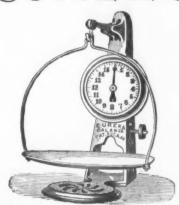
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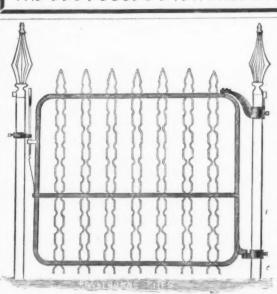
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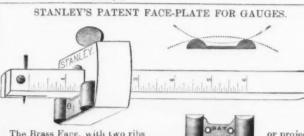
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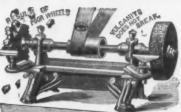


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(Concluded from page 1.)

washing, and this may be readily effected without in any way disturbing the operation of the other portions of the plant. To accomplish it, the valves in the inlet and outlet pipes, K and L (Fig. 1) of the filter to be washed, are closed, and the valve in the pipe S is opened. Water from the feed pumps A then comes directly through the pipe R, enters the filter under the filtering material, passes up through it, agitating and loosening the filter bed, and producing pressure which forces the filtering material through the pipe E (Fig. 2), the clamp and ball valve D at the upper end having been opened, and discharges it into the upper of the two compartments, into which the filter is divided. This compartment A should previously have been filled with water. The filtering material, being heavy, settles immediately to the bottom, and displaces immediately to the bottom, and displaces the water which flows out through the upper waste-pipe, marked O in Fig. 1, carrying with it the impurities. The discharge pipe E in Fig. 2 is furnished with a lossening rod F, extending through the whole hight of the filter.

After all the filtering material has been discharged into the conventment of tank A

discharged into the compartment or tank A, the valve in the pipe S (Fig. 1) is closed, and the valve in the lower waste pipe P is opened. In addition, a valve C, arranged in the bottom of the tank A (Fig. 2), is opened by means of a hand wheel, H, at the top of the filter. The filtering material then settles back into the lower compartment B, at the same time being subjected to a second washing, as the lower tank would have been illed with water while discharging the sand into the upper one. The falling material, as in the case already described, displaces the water which flows off through the lower waste pipe (P in Fig. 1), carrying with it any impurities not removed by the first washing in the upper compartment. After the filter-ing material has all settled back into the compartment B, the seat of the center valve C should be washed off by means of a hose attached to the pipe R (Fig. 1) at T. After closing the valve C and also the valves in the waste-pipe P (Fig. 1), and in the pipe S. and opening the valves in the pipes K and U, water passes through the filter, up through the pipe U, into the tank A (Fig. 2). After this tank has been filled, ready for the next washing, the valve in the pipe U should be again closed, and the valve in the outlet-pipe L opened. The filter will then again be ready for regular work. It will be noticed in Fig. 1 that convenient shutting-off valves are provided at different points in the pipe system. In Fig. 4 we show a sectional view of one of the outlet valves, of which there are eight arranged at the bottom of the filter. These are marked V in Fig. 3: These "cone valves," as they are called, are furnished with two perforated metallic dia-phragms, D D, the space between the two being filled with copper shot. The small ball valve B, it will be observed, does not completely close the channel immediately under the lower and smaller diaphragm, but is designed only to throttle the flow of water upward when the filter is being washed, so as to compel an equal quantity to pass through each cone. In the ordinary filter-ing operation, when the flow of water is downward through the diaphragms D D, this valve B rolls into the pocket H, leaving a free passage for the filtered water. A pin, shown in the engraving, prevents the ball from rolling further and choking the

In actual work Mr. Hyatt's system, we understand, has given excellent results. A circulating and filtering plant of the same general character as that which we have described is under consideration for use on locomotives. The filtering material consists of two parts of coke and three of sand, all carefully sifted.

senting armament, torpedoes, stores, men and equipment, and an additional 14 tons of coal, or 29 tons in all. 3. Between the two full-speed trials a consumption trial of 12 hours' duration to be made, to show that with the trial weight as above on board, the vessel could steam 1200 knots at a speed of not less than 10 knots per hour. 4. The armament to consist of two five-barreled Hotchkiss 47 mm. revolving cannon, with 500 rounds of ammunition to each gun. 5. The torpedo tubes to be three in number, two through the bow and one on deck, each 19 feet long. 6. Metacentric hight to be not less than 1.75 feet. 7. The pumping power to be sufficient to eject at least 520 tons of water per hour, independently of the pumps for surface condensers. 8. The bunker capacity to be sufficient to give vessel a radius of action of at least 2000 knots at 10 knots. The dimensions selected to fulfill these conditions were: Length on water-line, 142 feet; beam molded, 17 feet; depth at middle of deck, 9 feet, 6 inches. The total comple-ment of the boat is 22, four of whom are officers, and are accommodated in the after part. The clear deck area per man for the 18 men is 9 square feet, and the space per man is 120 cubic feet. The living compartman is 120 cubic feet. The living compartments are placed in communication with the forced draft fans, so that as long as the stoke-hole ventilators can be kept open, these compartments can be well ventilated. The condition of lightness of hull and machinery which must be fulfilled in order to obtain the high speed desired, taken in conjunction with the conditions as to subdivision and habitability already mentioned, make and habitability already mentioned, make the percentage of surplus buoyancy very high, and consequently a vessel of this character is very lively in her motions. This liveliness is not compatible with com-WARRANTED.

This liveliness is not compatible with comfort, and consequently tends to detract from
been purchased by the Standard Oil Comthe habitability of the vessel. The results
of the consumption trial showed that, with
to Indianapolis in four months.

the 45 tons of coal which the bunkers would hold, the vessel had a radius of action of

hold, the vessel had a radius of action of over 4000 knots.

The results of her behavior at sea, as reported by her commander, showed that she could safely go through heavy weather, but whether her crew could remain in werking condition long enough to traverse 4000 knots at to knots which would be about 17 knots at 10 knots, which would be about 17 days, can only be determined by continued trials. On her speed trials, details of which are given at the end of this paper, she at tained 19.96 knots with nearly 41 tons weight on board, and she attained 20.6 knots with nearly 34 tons weight. These speeds are the mean of the speed on the three hours' run as deduced from the revolutions. At a later trial, with ounkers full and all stores and equipment on board, ready for sea, she attained a mean speed of 18.55 knots. The total weight on this trial was about 70 tons. Both these vessels were lighted throughout with incandescent electric light, and had a search light of 12,000 candles. The Destructor was built for the Spanish Government, and is a vessel 192 feet long on water line 25 feet heam and feet long on water line, 25 feet beam, and 12 feet molded depth. Her displacement fully equipped for sea, but with coal sufficient to steam 2050 knots, is nearly The conditions to be fulfilled in this tons. vessel were similar in character to the Wiborg: I. The speed to be 22 ½ knots per hour upon two trials, each of which to per hour upon two trials, each of which to be of three hours' duration. 2. The load at the trial to be 43 tons of stores, outfit and equipment, 37 tons of coal, and 8 tons of fresh water for boiler service; a load of 88 tons in all. 3. Consumption trial of 12 hours, to show that 37 tons will drive a vessel at least 1500 knots. 4. The armament to consist of one 9 cm. gun, four 6 pounder rapid firing, two 47-mm. revolver, Hotchkiss, five torpedo tubes, two in the bow, one in five torpedo tubes, two in the bow, one in the stern, and one in each broadside, each 15 feet long. 5. Metacentric hight not less than 3 feet. 6. Pumping power to be 2000 tons per hour. 7. Bunker capacity to be sufficient for radius of action of 3500 knots. The vessel is divided into 39 water-tight compartments. compartments. The engines in this case are in two separate engine rooms, and the boilers are in four separate compartments. Coal protection is afforded round the ma-chinery and the boilers by the bunkers; but in addition, abreast of the engines, the bunker bulkheads are formed of steel plates % inch thick, which are placed there to protect the machinery from machine gun fire. Forward of the boilers and magazines is placed a curved bulkhead 114 inch thick to give protection from raking fire.

This vessel, at her trials on the Clyde, attained a mean speed of 22.56 knots for

three consecutive hours. The mean I. H. P. developed was 3784 and the mean revolutions of the two engines 292. On a subsequent three hours' trial the mean speed was 22.68, the I. H. P. and the revolutions cor responding being 3829 and 292.3. At the consumption trial the vessel was run at a mean speed of 11 6 knots for 11 hours, on a total consumption of 57 cwt. This was obtained by using only two boilers, and the result corresponds to a radius of action of 4929 knots at 11.6 knots. The mean I. H. P. over the 11 hours was 297, so that the consumption corresponds to 1.95 pounds per I. H. P. per hour. The consumption of coal at the full speed trials, which were made with a mean air pressure of 2½ inches, was 2.4 pounds per I. H. P. per hour. There is no doubt that a much lower rate of consumption per I. H. P. per hour was obtained between these two speeds, but no means were taken to measure it. The consumption at full speed is not as high as might have been anticipated, and it gives the vessel an estimated steaming power of she ran on January 24 and 25 from Falmouth to Muros—just beyond Finisterre—in 24 hours, a distance of 495 knots, which is at a mean speed of 20 625 knots. The Twin Screw Torpedo Boats.

From a long and interesting paper on "The Twin Screw Torpedo Boats Wiborg and Destructor," read at the recent annual meeting of the British Institution of Naval Architects, we take the following:

The Wiborg was built at Clydebank for the Russian Government. The conditions laid down were: I. Speed to be 20 knots per hour upon two trials, each of three hours' duration. 2. The weights on board at these trials to be a load of 15 tons, representing armament, torpedoes, stores, men

Rolled Steel Wheels .- On the 19th of April a patent was granted to Theodore W. Bean, of Norristown, Pa., for a method of rolling steel car wheels, consisting of giving the steel ingot the desired shape by means of two roll-heads whose shafts are journaled in housings, a third roll being provided, the periphery of which gives the shape to the tread of the wheel, which is moved by friction with the inger. tion with the ingot. The two roll heads are driven by gearing, power being applied to one of the shafts. We are informed that working models have been made and are in operation at the Eagle Works, Newbold & Son, proprietors, Norristown, Pa. An organization is now being effected to build a plant to produce the rolled steel car-wheel, which, it is believed, can be produced at a cost not exceeding that of the cast iron

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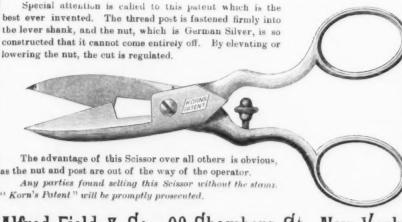
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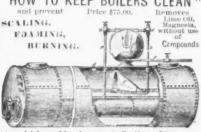
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## English Letter.

(From Our Regular Correspondent.) LONDON, April 25, 1887,

THE SITUATION

in the metallurgical trades of this country cannot be truthfully said to have undergone much change in either direction during the past week. The continued feebleness of repast week. The continued feebleness of reports from the United States has served the "bears" very well, yet, on the whole, manufacturers have not been unduly influenced thereby, and have allowed the speculators to fling away values among themselves without being greatly startled. The very fine weather has to some extent sustained the irregular tree in the state of th iron and steel manufacturers in their views, inasmuch as it has been the means of stimulating several departments of trade which were badly in want of some such support. The better prospects of the agriculturists (who have not had so splendid a seeding time for many years past), the development of the London season, and the progress of the jubi-lee festivities arrangements have all had due and favorable effects. As matters stand, therefore, we are not any worse off than we were a couple or three weeks ago, while in some respects we may fairly claim to be a little ahead of the position we then occupied. Your market is being watched, al-though no longer relied upon, with much curiosity, especially as to the operation and incidence of the Interstate act. It is meidence of the Interstate act. It is held in some quarters that the lull you are now experiencing is almost entirely attributable to that law, and consequently that when its true bases shall have been determined you will have a big rush. Telegrams relating to the projected enormous extensions of railways this year are regarded as being convincing evidence to regarded as being convincing evidence to the same end, so that it is just possible that there are some among us who are yet enter-taining a "sneaking affection" for the good things which are to emanate from the United States. More cautious persons think the idea laudable, but just a little improbable. Our export trade, taking it as an entity, is not unsatisfactory, and compares well with that of last year; but it is complained in some quarters that the tendency is mark-edly in the direction of increasing shipments of crude material or goods upon which relatively little labor has been expended. It is held, therefore, that a good deal of the foreign business transacted is very little better than "giving change for a sovereign," with about as much profit as results from that money-changing operation. The home market is only moderately good.

and cannot possibly yield anything like its former results until agriculture is restored to something like its ancient prosperous condition. How that restoration is to be effected is a problem which is puzzling many British minds, and is leading many of the farmers, chambers of agriculture and other similar bodies to discuss the consequences of foreign bounties and duties, preferential railway rates and many other points which are not improperly or unnaturally regarded as having much in fluence in keeping our farmers poor, irritated and hopeless.

The Royal Agricultural Society last year announced competitive trials this year, in July, at the Newcastle show, of traction, portable and other engines. In December last the leading agricultural engineers protested against these trials on the ground of the great expense and trouble they would the great expense and trouble they would involve. The society still persisted, how-ever, and the manufacturers have now published their protest, nearly all the engine-making concerns having declined to take part in the trials. Some curiosity is felt consequently as to whether the society will resolutely proceed or whether they will "cave in" under the pressure brought to bear upon them. If they do go on some monor makers may win the prizes, whereas if the society gives way they will do so with some apparent, but no real, loss of dignity and prestige.

growing busier. The few days of fine genial weather have wrought a wonderful change in almost every department, and not only has there been an increase of business, but a greater buoyancy is perceptible, and a more hopeful spirit exists everywhere. Since the fine weather began the large houses in the furnishing trades have felt its influence in a

IN THE IRON MARRET

affairs, on the whole, do not show a more retrograde tendency than has been mani-fested for the last two or three weeks. Prices, comparatively, are not weaker, and, in addition, one or two encouraging features have characterized the past few days. For example, stocks in the public stores have not been increasing to the extent they were. Then, also, shipments have increased, and the records for the year, as far as it has gone, show a satisfactory advance upon those for the corresponding period of last year. Taking the market upon its merits, therefore, there is a fair prospect of a quiet, steady business, at tolerably good rates. Labor difficulties are still threatened, and further demands for increased wages have larger basis than has been recently the case, and the same remark applies also to Italy. On the West Coast matters remain precisely recent speculative transactions are losing their influence has created a rather hopeful for the most part there is not much cause class brands of best charcoal tin plates the for complaint. In the heavier departments the condition is not what could be desired, and several makers find a difficulty in keeping their works going. But this does quoted from 24/6 to 28/IC, Wales.

not arise so much from the lack of specifica tions as from the great and increasing com-petition with steel, which makers now have to meet. In old iron rails and scrap, business has been quiet, but prices remain firm, as before. F. Pitts & Co., London, quote—all c.i.f. New York or Baltimore: Old rails, 65/; heavy wrought scrap iron, 55/ @ 60/; iron fish plates, 67/6 @ 72/6, and leaf spring steel, 63/ @ 67/6. All values very for pig iron by ordinary steamer from Glasgow to New York continue steady at late rates. From Liverpool to New York and Boston, bars, sheets, and tinplates rule at about 7/6 per ton, and from the same port to Philadelphia bars and boops are quoted at about 10/ and 10%, and tin plates about 12/6 pt ton. On metals rates to New York from Liverpool are about 20% and 10% primage 72 ton. Sheets and tin plates to Philadelphia are 12% and 10%. To Baltimore there are such indifferent returns the shipping companies prefer not to quote, as it does not pay to put a steamer on just now. From Swan sea to Philadelphia tin plates are about 15, Ef ton. Steel has continued in good demand but makers complain about the lowness of the rates ruling in the lighter departments. Bridge builders are reported busy, some exceptionally good orders having been placed lately. For the moment no fresh inquiries are before the market for steel sleepers, but it is understood that an important specifica-tion is about to be given out for an Indian railway. Blooms for the United States are quiet this week, and values are not so high nominally; about 75/ buyers and 77/6 sellers may be quoted. Steel rails have not been actively inquired for during the week. An order for 10,000 tons which has been hangorder for 10,00 tons which has been hanging fire for some little time, for the United States, has now been given to the West Cumberland Iron and Steel Company, Limited. The price is understood to be c. i. f. on the Pacific Coast, near to San Francisc for which place freights are not easy to determine. There is, however, good reason for stating that the price at the works will approximate to £4. 5/ ?? ton. There are reports of other business having been done this week for the United States.

SCOTCH PIG IRON

is dull and flat, warrants being weaker on speculative selling by the bears and realizations by weak outside holders. They are 40/7, against 38/7 a year back. There are now 80 furnaces in blast—52 ordinary, seven basic and 21 hematite-compared with 97 this date 1886. In Connal's stores there are 863,427 tons, as against 734,715 tons a year since, last week's additions being 2319 tons. Shipments to date are 114,232 tons, or 13,046 tons more than up to the same date last year. Importations of Middlesboro' pig into Scotland have been 104,404 tons this year, or 10,160 tons more than last year to same date.

MIDDLESBORO' PIG IRON

is a trifle better, if anything, but no change of real moment has taken place. Shipments are rather above an average, but the local umption is poor.

HEMATITE PIG IRON

is nominally unchanged, but is being a good is nominally unchanged, but is being a good deal knocked about as regards warrants by the Glasgow speculators. There are 55 furnaces in blast on the West Coast, against 43 a year since. Stocks in stores only are 131,-970 tons, or 56,514 tons more than at the end of last year. Pig-iron shipments have increased by 2224 tons this year—a large increase last week—while rail shipments are 56,514 tons better to date.

THE HARDWARE TRADES.

THE HARDWARE TRADES.

In London there is a palpable improve-ment in business, but that was to be expected, seeing that the London season is gradually growing busier. The few days of fine genial marked degree, and building operations are becoming so active that the trade in builders' ironmongery will soon feel the influ-ence of the welcome change. In spring goods generally a fair start has been made goods generally a fair start has been made since the holidays, and the total promises a good average season. At Birmingham a fair number of merchant orders for iron hardwares, and especially hollow-ware tools and bedsteads, have been issued since the quarterly meeting last week, the demand being arising last week, the American being principally from the South American markets, India and Victoria.

TIN PLATES.

In London the market may be described as steady, with ordinary I C cokes 12/9 as 13/, f.o.b. Liverpool. There has, however, only been a moderate business done during been made. Glasgow warrants have not excited much attention, and have generally declined, closing at 40/7 \$\frac{1}{2}\$ ton. In makers' market has been marked by extreme quiet-ness. Buying for the States on anything like an extensive scale has apparently ness. Buying for the States on anything like an extensive scale has apparently stopped for the present. There have been a few inquiries for some special lots, but not many lines of ordinary sorts have been On the West Coast matters remain precisely as they were, except that warrants have receded to about 42/6. Makers are not Continental trade, but no really large orquoting for the time being, but nominally, mixed numbers approximate upon 44/6 (a) the American buyers is still of lower prices. Aff. In Cleveland the business done has been small. The report that the recent speculative transactions are losing (b) 12/9 IC, Liverpool, is the present idea, and it is understood that some of the commoner brands have been done at 12/6 (b) 12/7 IC, while some fairly good brands. feeling. For No. 3 G. M. B. the ruling rate has been about 34/. In Staffordshire some of the makers who, for several weeks past, declined to meet the views of buyers, hand. The minimum figure for these so far have now shown a disposition for business, is 12/9 I C, though many good brands are but the majority remain apparently indifferent. In the finished departments, and notably the lighter branches, no change can cokes are almost unchanged in prices at notably the lighter branches, no change can be reported, black and galvanized sheets have been in good request, and fairly satisfactory values have been realized. No falling off in bars, nail or wire rods has been reported, nor have angles and ties been less inquired for. Some of the works would like to be busier than they are, but for the most part, there is not much cause class brands of best charcoal tim plates the

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Plantsville, Conn.,

MANUFACTURERS OF THE

# BEST QUALITY CARRIAGE MAKERS' HARDWARE,

Manufacture the Largest Variety of Forged Carriage Irons, of Best Material and Workmanship.

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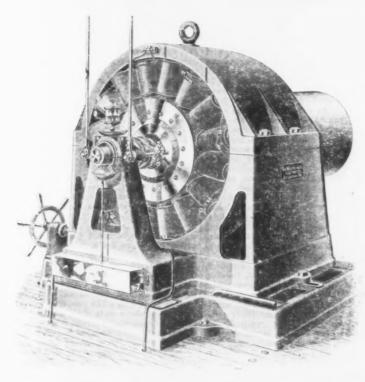
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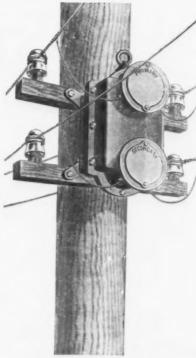
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2, 1887.

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TEAL'S Portable Hoist, Patented, April 8, 1884

Advantages claimed.

1st Heing made with Spur-Gears and at the same time sus-taining, the load st any point. 2d, one man of ordin-ary strength is capa-ble of raising the load for which each hoist is built.

load for which each hoist is built.
3d The ability of rapidly raising or lowering the empty hook by pulling on the lift-chain, instead of the slow and tedious process by the hand chain.
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Hawsing Beetles Hawsing and Calking Irons; also all kinds of Handles, Sledge Chisel and Hammer Handles, Also Cotton & Bale Hooks

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Liberal Discount to the Trade. Send for List. COFFIN & LEIGHTON, Syracuse, N. Y.



CURTIS Pressure Regulator,

STEAM and WATER is made entirely of metal occupies the same space as a globe valve. It has no glands or packing, and is a lock-up valve. Write for circular. Manufactured by Curtis Regulator Co.,

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HARRANTE A1 6 STANDARD MADE BY O' all the sta-

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EVERY REQUISITE IN THE LINE.

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Will not Warp. Will not burn off at the ends.

Will give absolutely 70% air space. Will give uniform combustion of fuel Send for Circular and ALEXANDER TRAUD, EAST FERRY STREET IRON WORKS, Price List to NEWARK, N. J.

THE WEEK.

town and Maysville, 28 miles, with 4 barrels for the round trip.

An earthquake in the Santa Catalina abundance of water, invaluable for farming street for rapid-transit purposes. The conat a point where the side of the mountain \$100,000 were paid on Monday slid down.

The Standard Oil Company are about to on the 24th inst. contract for the construction of an iron tank steamship for the coastwise trade, to depth of hold, with triple expansion engines, steel boilers, with forced draft and all the latest improvements in marine engineering.

delphia.

The steamship Allianza, of the Brazilian Line, now makes all the ice needed for the use of the ship.

the yards in Philadelphia.

The St. Paul Pioneer Press says people in that community are beginning to understand that the "long haul" clause is an ingenious device to cut down the price of farm products and to break down the West, and that in the end the public will learn how much easier it is to get a bad law enacted than o efface the vil effects t ereof.

The passage of a law requiring the periodthe State by a competent engineer, is will yield \$1000 per acre under the imrecommended by the Railroad Commission- proved processes of manufacture. ers of Massachusetts, the results to be reported to the board.

\$2,000,000, but the local government with- center. holds its consent.

The Court of Appeals has affirmed the which was recorded as a deed. It was shown 5600 feet. on behalf of the mechanics that the deed was really a mortgage and that it was not favor of the mechanics. The judges of the Court of Appeals have now affirmed the judgment of the lower courts, holding that mechanics who give their labor and furnish materials in the construction and erection of buildings must be protected, and that the owners of buildings cannot deprive mechanics of their rights by hiding behind mortgages which are not properly recorded.

The assessed valuation of Buffalo for 1887 s \$128,556,000, of which nearly \$9,000,000 represents personal property, an increase of \$6,186,000 over 1886.

Skilled workers are in demand at Castle Garden beyond the supply, and there are numerous applications for farm hands.

The steam steering apparatus on the Trenthat the steering gear of the Chicago is utterly useless and will have to be replaced. free of duty. The Chicago's apparatus is that of the Adparatus for the Dolphin from Williamson Brothers, of Philadelphia, and its estimated Navy Yard.

by the Treasury Department that his tools tunnel. It might pay if it connected the and implements are not entitled to free Long Island Railroad with other railroads, entry as "tools of trade, occupation or em- Mayor Hewitt said that the commissioner ployment of persons arriving in the United could report to the Legislature that the States.

Secretary Whitney's auction sale of condemned naval material, at Norfolk, 24th inst., comprises a variety of machinery, steamship boilers, lathes, tools and hardware.

John H. Simpson, who had charge of the dynamos and electric apparatus in the draft a report to the Legislature. Adams Express office, 41 Trinity place, was instantly killed when exhibiting his power of resisting the electric shock, which he said "did not affect him much any more," Putting each hand on a wire, he fell dead.

The Committee on Commerce and Navigato complete the Poughkeepsie bridge.

H. Fay on March I last. The next day the sheriff came in with five attachments merged Crude petroleum is being used as fuel in The claims aggregated \$10,000, and on Monin a judgment and held by Lissberger & Co. running a steamer on Chatauqua Lake. By day Deputy Sheriffs Delmour and Mulvaney the use of Lilley's invention the largest sold about \$4000 worth of the assets of the steamer there can be run between James- defunct concern in satisfaction of one of the judgments, which was for \$3000, said to have been loaned to Lefferts & Co. the day before Over to large propellers will be added this the assignment was made. About \$8000 senson to the fleet of grain vessels on the lakes, and many new canal boats will be in the hands of the sheriff, and have been put in storage.

Parties supposed to represent the Man-Mountains, Arizona, on the 3d inst., is hattan Elevated Railroad Company have said to have brought to the surface an contractel to purchase 600 lots above 155th purposes, and opened two large gold veins sideration is said to be \$3,000,000, of which

The New York Legislature will adjourn

The American Exhibition in London was carry 260,000 gallons in bulk. She will be formally opened on Monday. The bursting 1921/2 feet long, 301/2 feet beam, and 16 feet of a boiler, it is said, being "peculiarly American," was accepted as part of the regular entertainment.

Abram Steers's lumber yard, in Harlem, Blocks of marble weighing 14 tons are was destroyed by fire on Saturday night, being raised 340 feet to their positions in the together with some of the most valuable tower of the new City Hall building in Phila | machinery used in the planing mill business. Loss, \$100,000. Incendiarism is suspected.

The Supreme Court of Vermont has announced its decision in the famous case of the Ryegote stonecutters' conspiracy, grow-Cramp & Sons on Saturday laid the first ing out of the attempt of the workmen to keel plate for the new cruiser Baltimore at prevent the employment of other workmen, and to deter them from working by denouncing them as "scabs," and threatening to make them publicly odious as such. The decision of the Supreme Court is that a conspiracy among workmen to prevent others from working or from being hired is a crime at common law, and punishable under the statutes of Vermont.

A poppy grower of many years' experi ence in Eastern countries is attempting to ical examination of all railroad bridges in produce opinm in Florida, which, he says,

The Cotton Press Association of New Orleans, recently organized, claim to have ob-The Pennsylvania Railroad Company pro- tained control of the cotton business in that oses to construct an elevated railroad in city, and predict that reduced cost in hand-Jersey City to cost, with its terminals, ling will give a new impetus to trade in that

Colonel Haskin's Hudson river tunnel has again taken a fresh start, one more section on judgment of the lower courts in a case of the New York side having been added this much interest to builders and mechanics. A week, and the enterprising projector promises number of mechanics in this city who had that one of the two parallel tunnels which not been paid for their work on a certain have already been well advanced will be comstructure filed a lien on the building. Seven pleted within 18 months. The iron plating days before this lien was filed the owner and interior lining of brick were found to be gave what purported to be a deed, and well preserved. The entire length will be

Sales of real estate in New York city since January I are computed to reach properly filed. The lower courts decided in \$50,000,000, taking the figures of the R-al Estate Exchange as a basis of calculation, although the sales recorded meanwhile in the Register's office are double this amount. of course including old transactions.

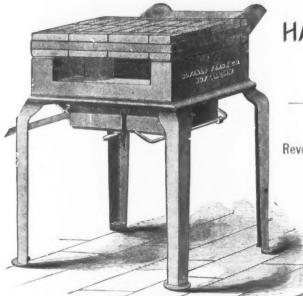
> Contracts have been closed with Clyde builders within a few days for the construction of two first-class steamers for the Inman and International Steamship Company. They will be of the same general character as the Aurania, Servia, and other fast ships.

The Canadian Manufacturers' Association met in Toronto last week, and passed a resolution that unrestricted reciprocity in manufactured goods would be a serious blow at the commercial integrity of the Dominion, and that Canadian manufacturers are unanton proved a failure and then that of the Dolphin refused to work. It is now learned United States and Canada which would

The question is being considered by Mayor visory Board. The Navy Department has Hewitt, General Newton and others, who already ordered a new steam steerage ap- constitute a commission recently authorized by the State Legislature to inquire into the subject, whether another bridge to Brooklyn value is \$3000. It will not be ready for at from New York City or a tunnel is most least a month, and in the meantime the feasible. At a meeting in the Mayor's office Dolphin will be laid up at the New York last week General Newton said that he did not know whether there was any present A Canadian railway builder who has a necessity for the tunnel or bridge. contract to execute in Maine, is informed miles of approach would be necessary for the bridge or tunnel could be built, but that, having no money to employ experts, they could not report the expense or feasibility. At the same rate of expense as the Erie and Lackawanna tunnels, this tunnel would cost about \$5,600,000, besides the cost of the right of way. A committee, headed by Commissioner Newton, was appointed to

The importance of maintaining amicable trade relations between the United States and Canada was the sublect of an address by Senator-elect Hiscock, of New York, is. which he contended that the time is ripe for a measure of reciprocity which would benefit tion, in the New York Legislature, reported both countries and be a blessing to the favorably to the Assembly the Hoysradt 60,000,000 south as well as the 6,000,000 bill, giving the parties interested until 1890 north of the lakes. Canada to-day, he said, is the third best customer the United States Marshal, Lefferts & Co., who have for has, coming next after England and France. many years been large dealers in galvanized To the south of the United States are and sheet iron, made an assignment to James 50,000,000 of people : to them we sent last

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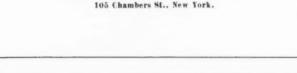
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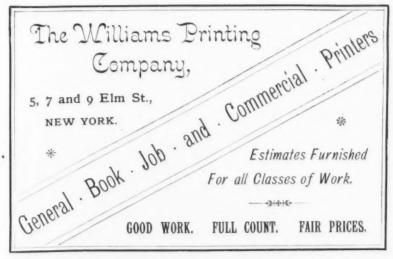
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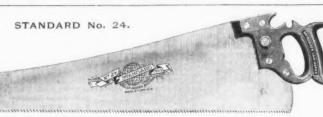
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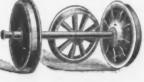
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Width, 6 inches.



For 2, 21/4, 21/2, 23/4, 3 inch Tire.

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KYES & WOODBURY.

of trade for manufactured goods was \$90,000,- under such an arrangement. 000 in our favor. How much greater would it be now with the great advancement made during the last 30 years. The Retaliatory E. B. Bartlett & Co. for damages on account bill might fitly voice the sentiment, feelings and methods of a century ago, but is hardly consonant with the evidence of the broadening civilization of the nineteenth century.

The men employed in the erection of the new steel-forging and armor-plate works for Pa., were on Friday put upon 12-hour time, their fleet. The new bont will be a comto hasten the completion of the buildings, so that work on the large Government contract

apolis about May 22. The building, it is ably be ready for the season of 1888 claimed, will be the first of its kind in the world, "built wholly by the efforts of workingmen.

Two of the great pumps that are to exand the sewage from the city sewers is now bottom. Only two persons are known to being lifted 17 feet into it by the big pumps have been lost. and carried away. The cost of the work so far is \$500,000.

A report received at Washington from the has eight compartments. United States commercial agency in London, Ontario, speaks of the disastrons effects of the Interstate law in checking both the import and export trades, and this is believed last year amounted to \$1,600,000. to be true of all points on the frontier.

Certain parties in Boston who wish to im-England free of duty are informed by the Treasury Department that it cannot be

The Mexican Financier laments that the Argentine Republic is outstripping Mexico, not only in developing her internal rebe going too fast, but at least they are thoroughly in motion.

The Diario de Cienfuegos says that owing to better cultivation and improved machinery, the yield of the cane has been gradually increased in Cuba during the past years to an extent that allows planters to-day to produce on some estates I hogshead of sugar with 650 arrobes of cane, while in former times 1500 arrobes were needed to obtain the same result. In the central factory Sociedad," where the mills, filter presses, and all the other apparatus in use are of the best so far invented, the average obtained in manufactured sugar is 10.40 per cent. of the gross weight of cane, with good hopes of raising soon the yield to II per cent.

A scheme is on foot in St. Paul to reor ganize the Northwestern Mfg. and Car Company with ample capital and no debts or

The St. Louis trades union decided that no flag except the stars and stripes should be carried in public parade.

The Massachusetts Legislature makes Labor day in that State a legal holiday.

The New York Subway bill, extending the term of office of Con.missioners Hess, Gibbens and Moss until November 1, 1890, after which their powers are to be vested in the Sinking Fund Commissioners, adding the mayor to the commission and legalizing the contract pronounced invalid by Judge railway strikes of last spring. The immense

ures almost identical with the Interstate law, the main design being to prevent discrimina. Kansas employees been free to act indetion in the rates of freight.

A terrible explosion took place in the Vanccuver Coal Company's mine in British Columbia on the 4th inst. Total number known to have perished is 189, of whom 82 were Chinese and 107 whites.

The State Department at Washington is preparing a report upon the restrictive and retaliatory features of foreign tariffs upon American products.

The Philadelphia Gas Works Construction Company have commenced an action in the ight Company, of New York, to decide the tle to a patent hydrocarbon gas generator, to which plaintiffs set up an exclusive claim in that city.

Attorney-General O'Brien, of the State of New York, decides that the Legislature has power to regulate the price to be charged by grain elevators for storing and handling Diego. Last year the shipments east from the lakes to the canal, whether the business is conducted and the charges made by individuals or corporations.

President Adams, of the Union Pacific Railroad, who formerly paid \$85,000 every month to the Pacific Mail Company to keep up their rates of freight, avers in his state | Grand total

year \$60,000,000 of goods. To the north of ments before the Interstate Commerce Comus are 6,000,000; to them we sent nearly missioners that if compelled to obey the law \$50.000,000 The annual imports of Canada a large part of the transcontinental business from the United States are to day more than will be driven to the old water route across from Great Britain. Under the reciprocity the Isthmus or around Cape Horn. The treaty of 1854 and during its term the balance shipping interests, at least, would flourish

> The jury in the suit of Lockwood & Mc-Clintock against Health Officer Smith and of the enforced disinfection of a cargo of rags imported by them by the patent process owned by Bartlett & Co., returned a sealed verdict, giving \$3000 damages against the latter.

The Old Colony Steamboat Company have the Bethlehem Iron Company, at Bethlehem, decided to add another large steamer to panion to the Pilgrim, though larger, and will be named the Puritan. She will have a double iron hull, and be fitted with com-The corner stone of a "labor temple" of pound engines of great power, with feather mposing dimensions will be laid in Minne | ing paddle-wheels. The new boat will prob

The French steamer La Champagne, from Havre for New York, came into collision with the Ville de Rio soon after starting on her voyage, and was run ashore to save the haust the sewage from the trunk sewers in lives of these on board, as her forward com-Newark have been put in operation. The partment filled, throwing the propeller out great flume to Newark Bay has been built, of water. The other steamer sank to the

The new steel freight steamer Worcester, trading between this port and Bristol, Eng-The Shah of Persia professes great inter- land, has triple expansion engines which est in promoting commercial relations with enable her to make 10 knots an hour with the United States, and suggests that there a consumption of only 18 tons of coal a day. are opportunities for railway construction in | She is 325 feet in length and has a capacity Persia which should attract American enter- of 4200 tons dead weight of cargo. She is built on the double cellular principle, and

The marvelous development of the natural gas business in Pittsburgh appears in the fact that a single company's gross earnings

Peat fuel is being used on locomotives in Northern Russia at a saving of about 50 port a ready-made iron church edifice from per cent. from the cost of coal and wood used hitherto.

The budget speech of the Dominion Finance Minister, to be delivered to-day, is anticipated with deep interest on account of numerous proposed tariff alterations.

It has been stated that three Cunard sources, but also in extending her foreign steamers, purchased by the Canadian Pacific trade. "The Argentines," it says, "may Railway Company, are now en route to Vancouver to take their place in the line to China and Japan. The service will be monthly, and the Home Government is asked to contribute \$300,000 per annum for its maintenance. The Canadian contribution has not yet been agreed upon.

> San Francisco papers speak of the shipment from California last week of large quantities of wool via the Canadian Pacific Railroad from Victoria, and the Panama steamer took out 224,000 pounds, valued at \$53,000. The rate by the Canadian Pacific is \$1.50 to \$2 for wool.

The largest table ever made from a single plank belongs to the Illinois Club, of Chicago. The plank is 15 feet long and 6 wide, and was cut from a California red wood

The case of the Fifth Avenue Bank against James B. Colgate, banker, of Wall street, eeking to hold him liable as a general partner in the firm of Humphrey & Co., which has been on trial for some days past in the Superior Court, ended on Friday in a verdict in favor of the bank for the full amount of its claim, \$11,990. Humphreys & Co. were leather dealers, and failed five years ago. Colgate claimed that the firm was a limited partnership, and that he, being a special partner, was not liable for their debts.

The report of the Commissioner of Labor Statistics for the State of Kansas gives a Van Hoesen, passed the Assembly by a vote loss, directly and indirectly, to the people, it says, cannot be accurately estimated, but A bill has been introduced in the the commissioner is inclined to place it at Dominion Parliament in its principal feat- \$3,500,000 to the roads and \$1,100,000 to the strikers. He concludes: pendently of those in the other States affected the strike would have been speedily settled, and I have reason to believe that in the future our railroad employees will be less disposed to extend their alliances beyond the limits of the State and more ready to try the efficacy of our own law providing for arbitration.

The Farmers' Alliance Cotton Congress, of Texas, assembled at Waco, and made arrangements for the extensive manufacture in that State of agricultural implements. cotton presses, oil mills, &c., and approsupreme Court against the Standard Gas priated \$500,000 for the erection of a cotton mill. Over \$10,000,000 were represented.

> San Francisco still holds her pre-eminence as a supply depot for the Pacific coast, compared with all other terminal points on the transcontinental routes. The State holds most of her trade against the rivalry of Vancouver, Portland, Los Angeles and San

various termini	n points were as	follows:
San Francisco.		292,342,180
Los Angeles		49,652,030
Sacramento		45,085,640
San Jose		23,616,850
Oakland		58,112,710
Colton		6,338,946
Marysville		3,848,83
VI 1 4 4-1		110 105 570

AND METALLURGICAL REVIEW.

New York, Thursday, May 12, 1887.

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CHATTANOOGA ......Ninth and Carter Street S. B. Lowe, Manager.

#### The Coke Strike.

From many points of view the strike in the Connellsville coke region is to be de plored. The first effort at arbitration in that great industry, which has suffered repeatedly from serious labor troubles, involving incidentally a great part of the Western iron and steel trades, has practically failed because the men declined to accept the arbitrator's award. With similar experience in the past in the Pittsburgh coal trade, employers in that district will hesitate long time before they seek settlement through a method which is final only when it happens to give the work men nearly, if not all, they expected. Nor ar this time that the leaders of the men lovally accepted the award to find themselves overruled by their fellows. It is true that a number of men supposed to be influential in the councils of labor in the Pittsburgh district have roundly denounced those who have put themselves at the head of the strike, but the fact remains that their broader views are unbeard in the clamorings of the rank and file and the wild speeches of their direct leaders.

To the iron and steel trades the strike is of the gravest importance, since its effect will quickly be to cause a restricti-a of output of iron both in the West and East. In the latter section it will cut off the use of coke at a number of furnaces and cause them to use more exclusively anthracite as a fuel, thus limiting their capacity. In the West the efect will be far more serious. The furnaces in the Shenango Valley, the Pittsburgh and Wheeling districts, in Ohio and Illinois will be forced at once to run slowly to husband their fuel supply, and if the trouble con- it is to be presumed that the clause affecting tinues they will be compelled to bank down, railway traffic will find a sperly and satis-Some of the districts will not be affected, but factory solution, and although the labor nearly all the modern stacks throughout the question again threatens to effect the natural West depend largely if not entirely upon expansion of domestic trade, we may soon Connellsville coke, with the exception of beable to resume active dealings at home those who can conveniently get access to without much irritating local incumbrances. Kanawha coke. The aggregate production The elements underlying general trade with of these works is enormous, and while the us certainly point to an absolutely sound conheaviest part of their make is Bessemer pig, dition. With no present danger of tariff more furnaces running on Bessemer than plates, sheets, &c. In this line the West they produce also largely of foundry and tinkering, with the money market working stated. In New Jersey, two furnaces work has merely held its own, having produced Company now have three furnaces running mill grades. If continued for any length of evenly and heavy railroad earnings, the ing on that grade turned out close on 4500 606,188 net tons in 1886, against 609,675 on Bessemer, and the second Paxton has time, the strike will inconvenience every prospects, generally speaking, are quite tons in December, 1886, while the above tons in 1880. And yet two more States, blown in on the same grade. In the Upper

blooms, and others will seek relief in pur-to our table will show that prices of domes-chasing pig, blooms or billets. The de-mand thus created would tend to give new further heavy imports at a time when and in port are conceded to be quite Minerva blew in after the 1st of May. American works had again succeeded in reconquering full control of our home markets. At the time when the Connellsville coke makers unduly advanced the price of that fuel, there was a chorus of protests on the broad ground that, by raising values of raw and, incidentally, of manufactured goods, foreign competitors were given a chance to raid our markets. Now the men are driving work abroad while they continue in idleness, and may force many men in allied industries to lose time.

Just before the strike, Bessemer pig, and to a less extent other grades, were showing signs of weakness in the West. That falling off may be soon expected to disappear, and should it be followed by a scarcity of raw material, continued over a period long enough to exhaust stocks, a rising tendency in rails, wire, nails, must develop. Found ers would be embarrassed both by scarcity of their test fuel, and by shortage in stock. Muck bar and rolled iron would be affected, and since manufacturers of rolled iron would to some extent turn to old material, that, too, might develop strength which has long been lacking. Such are the possibilities suggested by any long-continued struggle in the coke regions. It is to be hoped in the interests of great American industries that there will be no prolonged battle. Some of the furnace companies have already granted the advance asked. Months ago the coke operators offered an advance of 5 per cent. "for the sake of peace." A repetition of that offer might avert what appears to us a very serious danger to the trade. In competing regions the manufacture of coke has been greatly stimulated by the active demand, and the remunerative prices of the past year, and a contest now would greatly aid them. The Connellsville coke makers can certainly afford now to make concessions to avoid general suspension of work. The contest for an equalization of wages with other districts must come later. The present time is not opportune.

#### Four Months of General Business.

If we except the confusion into which railroad freights have been thrown by the the banks of the following cities for per-Commerce law in April, the first four uneventful in a general sense from a com-mercial point of view. The apprehended nately been avoided through mutual forbear ance, and with it a pretty general change of tige may be lost by New York in this transvalues of note on both sides of the Atlantic in the merchandise markets. While the uncertainties about this point lasted speculation was to a considerable extent checked, allowing most of the prominent articles to o60, but they had individual deposits move on their own merits or demerits, yet coffee and india-rubber proved irrepressible from the moment the gloom vanished. Apart from iron, silver and copper, showing a fresh decline, and excepting hops of 1885, domestic products have, generally speak ing, improved in value, cotton notably so. Among imported articles manila hemp has further depreciated, while sisal hemp has, on cents, sisal then being worth about 5 cents, but the latter is now being better prepared for market in Yucatan, and begins to closely compete with manila,

the beginning of the year:

Course of Prices at New York During the First

Four Months		
		April 80
Antimony, Cookson's		1887. \$0.09
Cocoa, Guayaquil	.1356	.1356
Coffee, fair Rio	.15	.1686
Copper, Lake Superior	.1134	.10
Cotton, midding uplands	.9 9-16	
Flour, extra State No. 1	4.25	4.25
Wheat, No. 3	.9184	.03
Indian corn. No. 2	4812	.4916
Hemp, Manila	.081.6	.0734
Hemp, sisal	.0616	.0734
Hides, dry La Plata	.2016	.20
Hops, best State, 1885	.13	.10
India-rubber, fine Para	.78	.81
Iron. Am. pig No. 1	21.50	21.00
Steel rais, domestic	39.00	88.00
Lead, common domestic	.0414	0414
Spirits of turpentine	.88	3836
Nitrate of soda	.02	.0236
Petroleum, refined	.06%	.0658
Lard, refined	.0642	.0712
Butter, choice dairy	.27	.23
Rice, prime domestic	.0414	.0436
Spelter, domestic	.0410	.0116
Sugar, fair refined Cuba	.0452	.0417-32
Tea, good cargo Oolong	.21	.20
Silk Italian raw No. 1.	4.35	4.55
Wool, California spring	.55	.57
Tallow, prime city	0416	.0876
Tin, Straits	.65	2262
Stearine, prime city	.0786	.0814
Tin plates, coke	4.2712	4.30
Sheet zinc, domestic, 9 x 36	.0582	0634

Now that inland navigation has reopened.

exception of the Colorado works. Some of has wrought no damage to speak of, and 1900 tons a month. Now, there are three them have been carrying a stock of pig or that fruit also promises well. A reference now running on Bessemer with a capacity buoyancy to foreign markets and allow of of the masses are ample, while stocks inland at the rate of over 1500 tons a week. manageable, further developments in the They did considerably better in March. merchandise markets on this side are looked | The figures for Michigan will be puzzling to forward to with great confidence. Some any one in the trade, and few will be able are even sanguine enough to expect a to enumerate the seven "miscellaneous boom" in October.

#### Western Financial Centers.

Hand in hand with the rapid development of our natural resources which has characterized the past quarter of a century, the accumulation of capital has steadily pro ceeded. The seaboard cities were the first to reap the benefit of this movement toward financial independence, which has not been checked by panic or depression. New York especially became a center of activity for every branch of commercial enterprise, and national legislation assisted that city to secure and maintain financial supremacy. Under a recent act of Congress, however, the other large cities of the country have heen given an opportunity to develop their advantages as financial centers. Cities having at least 200,000 inhabitants are now permitted to become "central reserve cities on the petition of three-fourths of the national banks located therein. The national banks of such cities are required to keep a reserve of 25 per cent., but they are enabled to receive deposits from the banks of smaller cities and rural districts. While the banks of the central reserve cities lose some advantages, in being compelled to keep their reserve at home, and therefore deprive themselves of the chance to send such funds to other parts of the country and probably secure a high rate of interest, on the other hand, such large accessions to their banking capital will be received that they will be able to conduct a much more profitable business generally.

St. Louis made application some time ago to be put into the central reserve class, and now Chicago has taken the necessary steps. The action of these two great Western cities is of much importance in the financial world. It means that hereafter more capital will be available in the West for business purposes. It has already been announced that applications have been received from ong and short haul clause of the Interstate mission to deposit in Chicago as a central reserve city: Milwaukee, Louisville, Clevemonths of the year have been singularly land, Pittsburgh, Cincinnati and New Orleans. This embraces a large territory, much of which has hitherto made New York clash of arms on the Continent has fortu- its central reserve city. Numerous country banks will do the same thing. Some presfer of capital, but the country will probably be benefited by the division. Chicago now contains 18 national banks, which had on March 4th a total circulation of only \$767, amounting to over \$41,000,000, and country bank deposits amounting to \$35,000,000 more. One bank alone in Chicago carries a line of deposits exceeding \$20,000,000, being surpassed in that respect by but one New York bank.

In our issue of January 20 we published the results of what we believe was the first the contrary, approached the former, an attempt to ascertain what proportion of the apparent anomaly. Some 10 years since entire product for the second half of 1886 manila hemp was considered cheap at 14 was Bessemer pig. The undertaking is beset by many difficulties, and we recognized in the course of that investigation the danger against which we had been previously warned that iron might be reported as be-We have prepared the following table in Tonging to that grade which in reality was in Ohio and Indiana. order to show at a glance the changes since not commercially so used. Those familiar with the trade know that furnaces are changed from one grade to another, and that iron made in at least one important notwithstanding the great increase which district is used to an extent not generally Illinois is able to show. In 1880 the State known in the manufacture of Bessemer steel. There are few problems in the iron trade which statisticians should approach with more care than this, and yet we find in the last issue of Bradstreet's a somewhat pretentious effort in this direction, the general result of which is that we are now producing Bessemer pig at a rate greater by 10,200 tons a week than we were doing in December of last year. The following is the sum mary of the data collected, concerning which our contemporary modestly believes that they include all producers of note, with the single exception of the Cambria Company

Weekly Production of Bessemer Pig. uction of Bessener Fig.

No. fur. April, Dec.,
naces. 1887. 1886.

47 25,480 20.185

8 6.826 6.020

13 13,250 9,530

5 2,060 1,847

2 1,475 450

3 939 555

8 1,400 1.820

3 939 555

8 000 460

7 2,910 2,670 New Jersey.... Wisconsin.... West Virginia

Total Bessemer pro-duction reported to \*Bradstreet's ... 92\* Total reported pro-duction pig iron of all kinds ... ... 353 55,512 45,189 40,485

137 528 127 660 104 867 leading. It would carry us too far to ana- iron commonly classed under the head of lyze Pennsylvania. In Ohio there are now rail mill. and nearly every Bessemer mill bright. It is too early to speak of crops, but table makes the capacity of them 350 tons a Minnesota and Iowa, contained rolling mills Susquehanna the Duncannon and one of the

furnaces running on Bessemer pig, with a capacity of 2910 tons a week, when there are only two or possibly three stacks which would not naturally come within the States named, one in Colorado and one in Tennes-While the make of Bessemer pig showed a tendency to increase during the first four months of the year, the increase has not by any means amounted to 10,000 tons a week.

#### Production of Iron and Steel in the of 1886. West.

The recently issued statistical report of the American Iron and Steel Association presents an opportunity for the collection of some interesting facts relative to the progress of the iron and steel industry in the the current year. A glance at the table West. The year 1886 was a period of great activity in this section. As compared with ties imported in the years 1885, 1886 and previous years, therefore, the achievements of 1886 surpass anything that had been hitherto accomplished in that part of the to foreign competition: country, while in complete harmony with the progress made in other sections. For the purpose of showing how rapidly the West is advancing in the manufacture of iron and steel, we have selected the census year 1880 as a basis of comparison with the production of 1886, using the statistics of the American Iron and Steel Association in both cases. We have also confined ourselves to the States of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa and Missouri, constituting the Central West, and embracing a tolerably compact section in ommunity of trade interests.

With respect to pig iron we find that this section produced 1,757.739 net tons in 1886, against 1,197,604 tons in 1880. This is an increace of 47 per cent. As the production of the country increased 48 per cent. in the same time, it will be seen that the West held Considering individual States, however, Illinois made wonderful progress during this period, advancing from an annual production of 150,556 net tons to 501,795 tons. Ohio also did well, having made 674, 207 net tons in 1880, and 908,094 tons in 1886. Michigan also progressed from 154,424 net tons to 190,734 tons, but the other States in this group did not help to swell the increase. It may be observed that the States of this small section of the country turned out more pig iron in 1886 that the whole country was able to make in 1868, and only fell a little short of the production of 1871. And yet the country was presumed to have some thing of an iron industry in those days.

It is safe to say that in 1886 these West ern States produced more steel than the whole country turned out in 1878, although statistics of the production of this section are not separately published. The State of Illinois alone made 535,602 net tons of Bessemer-steel ingots in 1886, against 304,614 tons in 1880, showing remarkable growth in this branch. The total production of steel in the Central West must have exceeded 800, ooo net tons in 1886, against about 450,000 tons in 1880. The production of open-hearth and crucible steel is included in these latter figures, but there has been no special progress in this direction since 1880, although 1887 will show a renewed impulse, owing t the starting of new open hearth steel work

There has probably been a decline in th production of rails in the West since 1886 owing to the abandonment of iron rail mills of Ohio, Indiana, Illinois, Wisconsin Missouri rolled 563,846 net tons of rails, bu in 1886 they barely reached 550,000 tons The production of Bessemer steel rails in Illinois in 1886 was 430,975 net tons, against 257.583 tons in 1880, showing an increase o over 67 per cent. This one Western State now makes as many steel rails in a year as the whole country turned out 10 years ago.

In the production of cut nails the Central West has more than doubled its record of 1880. In that year 1,404,763 kegs wer made, against 2,863,317 kegs in 1886. The substitution of steel for iron is forcibly il lustrated in this industry, more steel nails naving been cut in 1886 than the entire pro duction of this section in 1880, when not a steel nail was made. The nail production o 1886 was divided as follows: Steel nails 1,580,950 kegs; iron nails, 1,282,367 kegs. Ohio and Illinois made far more steel than iron nails, while in Indiana and Wisconsin the reverse was the case. It is rather remarkable that Missouri and Michigan make no nails, being wholly dependent upon other States for their supply, although prominent in the manufacture of iron in other forms.

One other important branch of the iron We have enough evidence to pronounce trade remains to be considered—namely, the these figures utterly untrustworthy and mis- manufacture of various forms and shapes of rolled iron, embracing bars, angles, shapes, west of the Allegheny Mountains, with the we are aware that the rather severe winter week, or at the rate of a little more than in 1886. As the country at large, however, Montour furnaces are now idle.

made about the same quantity in 1886 as in 1880, a lack of progress in this branch casts no reflection upon the West. In fact, in view of the substitution of steel for iron, which has in late years made such rapid headway, it is remarkable that the production of rolled iron does not show a heavy decrease. Rails and nail plate, plates and sheets, structural shapes, car axles, pipe skelp, wire rods and hoops and bars-all acknowledge the sovereignty of steel, and yet taking one form with another the total tonnage of rolled iron to-day corresponds closely with that of 1880

The figures we have given show the im portance of the Central Western States as an iron-producing section of the country. But, large as the figures are, the current ear will from present indications swell them considerably, owing to the completion of new works and also to the revival of old works which stood idle throughout the whole

The returns of the Bureau of Statistics on our imports of iron and steel continue to show the heavy movement which is the out growth of the large purchases made during the rise last year and the earlier months of below, which gives in gross tons the quanti-1887 during the first quarters, will readily show where we have most exposed ourselves

Imports of Iron and Steel for the First Quarter

	2	a come de	
-	1887.	1886.	1885.
Iron ore	818,490	212,663	80,020
Pig iron	93,790	74,685	26,039
Scrap fron	70.860	16,949	8,806
Scrap steel	7,181	1,600	843
Bar iron	6,996	4.829	4.219
Steel rails	25,147	4	1,048
Cotton ties	1,985	240	1,808
Steel hoops, bands, sheets	041100	420	Nº CARGA
and plates	4,896	553	276
Steel ingots, blooms, bil-	27.000	******	610
lets, slabs and bars	90,285	22, 291	4 4/90
Sheet, plate and taggers	1909 41303	46,601	4,639
iron	1.312	948	200
Tin plates.	62,588		699
Wire rode		57,987	54,222
Wire rods	35,678	31,237	22,422
Wire and wire rope	643	895	296
Anvils	429	191	110
Chains	163	137	180

It is well known that the freight engagements for May and June are very heavy, and it is likely, therefore, that we shall see a continuance of large imports throughout the second quarter, but beyond that the purchases thus far have been small-in fact, the entire new business done in pig, blooms, billets, rods, slabs, raifs and old material has been very light for two months, so that possibly June, and certainly July, will show a quick decline in imports, unless meanwhile buying again sets in. The only contingency likely to bring that about would be labor troubles on an extensive scale.

#### Condition of the Blast Furnaces. May 1.

As we foreshadowed when last reviewing the status of the blast furnaces throughout the country, there was a further increase in the output during April, with a tendency toward still higher figures at the beginning of the current month. It is well to state in this connection that often such an increase may prove more apparent than real, since it may happen that a few more of the great giants among the producers are running a few days earlier or later. The number of furnaces running has little or no significance, since the make varies within such wide limits. The status of the anthracite furnaces was as follows:

Anthracite Furnaces in Blast May 1.

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Location of furnaces.	Total number of furnaces.	Number of fur- naces in blast.	Capacity per week.	Number of fur- naces out of blast.	Capacity per week.
New York	30 15	17	4,992	13	8,590
New Jersey	8	8	8,247 945	0	2,520
Pennsylvania: Lehigh Valley	49	41	13,044	-	1.000
Spiezel	1	1	_50	7	1,790
Schuylkill Valley	44	28	8,958	16	2,510
L. Susquehan. Val.	85	26	9,587	9	2,073
Spiegel	1	1	275	0	0
U. Susquehan. Val.	18	11	8,084	7	1,080
Maryland	4	1	820	8	425
Total	199	187	43,802	62	13,948

As compared with former months we have the following :

f		Furnaces in blast.	Capacity per week
6	May 1	187	43,802
6	April 1	139	48.585
0	March 1	141	48,724
-	February 1	187	41,951
	January 1	180	40,788
8	D-cember 1	119	36,820
	November 1	116	86,348
ķ.=	October 1		85,819
B.	September 1		33,207
f	August 1	120	36,841
I	July 1		86,762
	June 1	121	88,289
	May 1	119	36,924

In New York the principal item of interest has been the blowing in of the first three of the Troy Steel and Iron Company's plant, on Bessemer pig, the only other change being the blowing out of one of the Manhattan furnaces for repairs. In New Jersey Chester went out, but has since again entered the list of producers. In the Lehigh Valley the second of the Allentown Iron Works' stacks has gone in after being remodeled. One of the Thomas furnaces was still out on the 1st inst. In the Lower Susquehanna region the Pennsylvania Steel

follows:

Production of Anthracite Pig, Four Months 1887. Gross tons. .... 69,605 6.,797 212 580 145,013 161,739 58,614 4,894

Total. 715,284 The status of the bituminous and coke furnaces was as follows:

Rituminaus and Cake Furnaces in Rlast

Location of furnaces	Total number of furnaces.	Number in blace.	Capacity per week.	Number out of blast.	Capacity per week.
Pennsylvania : Pittsburgh district. Spiegel Shenango Valley. Juniata & Conem. Spiegel Youghi. Valley. Alacheny Valley. Maryland Virginia. West Virginia Kentucky. Ohio :	18 1 30 22 1 6 2 2 10 6 3	17 1 14 17 1 4 1 1 1 1 4 3	16,600 450 8,065 7,967 250 1,346 475 250 3,346 1,751 863	1 0 6 5 0 2 1 1 1 3 2	550 0 1,530 970 0 680 115 90 835 597
Mahoning Valley Hocking Valley Hanging Rock Miscellapeous Illinois Hissouri Indiana Wisconsin Michigan Alabama Tennessee Georgia Colorado	17 15 13 15 16 8 2 8 2 12 12	12 7 9 12 10 3 2 2 0 9 9 9 2	7,749 1,531 1,919 8,084 9,500 1,525 335 1,513 0 4,959 3,995 976 550	8 4 8 6 5 0 1 2 2 8 0 0 0 0	2,126 1,024 939 1,509 4,750 1,965 0 365 580 890 0 0

The total for May compares as follows with preceding months:

	No. of	Capacity
	furnaces.	per week
May 1	148	88,509
April 1, 1887	148	81,796
March 1, 1887	146	79,682
February 1, 1887	145	79.257
January 1, 1887	187	73,422
December 1, 18:6	139	78,795
November 1	140	73,013
October 1	186	70,802
September 1	135	69,206
August 1	188	68.852
Jusy 1	132	71.316
June 1	129	70,766
May 1	129	67,858

There was, therefore, quite a striking in crease in the capacity of the coke furnaces blowing on the 1st of May. Since then, founders less fortunately situated, to join bowever, two of the Edgar Thomson furnaces-E last week, and A this week-blew out for relining. The new Laughlin furnace went into blast on the 26th ult., on probably all, of the Detroit foundries were Bessemer pig, of which it will probably non-union shops, and however large the make between 1200 and 1500 tons a week when in full working order. credited it with a capacity of 1000 tons coincident with the closing at Detroit, for May. In the Shenango Valley the Keel Ridge blew out on the 18th for repairs. The work in the Philadelphia foundries which the molders, the foundries in the member-Rosena is not expected to start before June. In the Juniata and Conemaugh valleys the and are under quite as much obligation to Cambria Iron Company now have all of the stop for the general good as the Detroit six furnaces at Johnstown at work on foundries can possibly be. It may even be Bessemer, besides the two Blair furnaces assumed that they have less urgent reasons and the E Conemaugh furnace on spiegel. for running just now, but the fact of their it is, we think, time that the Defense In Maryland, Virginia, West Virginia and starting up does not seem to produce any Association abandon their present atmos-Kentucky there has been no change what general consternation. This may be a phere of mystery and clearly state what ever. In Ohio the Steubenville blew in on question of district, but we fail to see that they require, why they require it and for the 21st ult., while in the Mahoning this is entitled to any great consideration, for what issue they are contending. There one of the Himrod and the second Hub- the reason that the geographical location of bard furnace went into blast during the a foundry no longer determines the area of conceding this much to a reasonable public month. Anna furnace was still idle on the its distribution. Taking all these facts into demand, but by refusing it they invite 1st, but has since resumed. In Illinois, consideration, we think it no discredit to suspicion, alienate public sympathy, and Indiana and Wisconsin there was no change. In the latter State the Minerva began operations on the 3d of the month, making Bessemer pig. In Missouri one of the Missouri furnaces was in operation only during a part of the month. It is now idle, only one of are more generally busy than ever before, who must be intimately advised of its moveand the April product was heavy, with a prospect that the output will be even larger attended, they seem to have succeeded un-May. In Alabama the Alice, Eureka and has again one of its stacks at work. Every getting any information. How much of this plant in Tennessee was in operation during the greater part of April, and they all those who have gone after this information entered the month in full blast. The same s true of Georgia.

While this May promised to become the beaviest month on record in the output of heavily in the entire territory west of the Alleghenies and north of the Ohio River. It is quite impossible at this time to make any estimate of the decline in product, should pending differences not be settled during the urrent month. Even now one of the Pittsburgh furnaces is banked, and many others its own object. It has given rise to the imwill in all likelihood follow suit quickly. Our figures, therefore, represent current capacity only if the strike is ended in a very

We estimate the product of the bituminous and coke furnaces for the first four months If the current year as follows :

The case years and services	
	ss tons.
Pittsburgh district	246,018
Shenango Valley	184,748
Juinata and Conemaugh	111.788
Allegheny and Youghiogeny valleys	
Maryland	2.000
Virginia.	58,281
West Virginia	80,897
Kantasha	
Kentucky	19,099
Nahoning Valley	120,970
Hocking Valley	24,198
Hanging Rock	87,489
Miscellaneous Ohio	125,282
Illinois	172,500
Missouri	29,841
Indiana	5,200
Wisconsin	24 192
Alabama	68,370
Tennessee	61,120
Georgia	14,466
Colorado	10,000
	,000

The production of anthracite pig iron If we add to this the make of anthracite for the first four months is estimated as iron, we reach a total product of both defend the present position of the manufact classes of 2,036,652 gross tons for the first third of the year, or at the rate of 6,100,000 gross tons per annum, which does not include charcoal iron.

#### The Stove Lockout.

During the past week the events con of peculiar interest. The impression which the news from various parts of the country from day to day, is a good deal like that conveyed by looking into a kaleidoscope. Every day turns the instrument and with each turn some new and surprising combinations are formed. For example, the three important foundries in Detroit have shut down in response to an agreement or demand, while those in Philadelphia, which promptly struck on the arrival of the objectionable St. Louis patterns, are now taking these patterns and going to work again. In many other respects the situation has changed in certain surprising ways, and while the whole position may be clear to those who are controll ing it from the manufacturers' standpoint, it is certainly very confusing to students of the situation who are not in their confidence. The surprise of the week is without ques

did a meeting held in that city last week, which was attended by the principal members of the National Defense Association, it looks very much as if the shut-down had been decided upon in response to a demand of the association, or as the result of a pressure brought to bear by it. We are not advised that the Detroit molders made any extraordinary or unusual demands, or that they gave any occasion to their employers for a suspension of operations. It was generally conceded that in continuing to run when most of the foundries in the country were closed up or more or less embarrassed by insufficient help, the Detroit foundries had a good thing; and while it is perfectly easy to understand why the trade at large should have desired them to close, it is not so easy to see why, having accepted in good faith the conditions imposed by the Defense Association and gone to work on the boycotted patterns, they should have considered it necessary or desirable to comply with the request of them in their misfortune. The object does not seem to have been primarily to break the molders' union, for at least one, and union membership among their men, We have the union did not control. we read of the general resumption of are members of the Defense Association, our editorial intelligence to confess that, for prejudice their own cause. This they canthe first time since the strike began, the situation presents anamolies which we do not understand.

ciation has been conducted with great secrecy. the stacks running. In the South the plants Notwithstanding the number of people ments, since its meetings have been largely commonly well in keeping their own Sloss did very well, while the Woodward sel and preventing newspaper reporters from success is due to the fact that a majority of have not known how to get it, and indeed have not been quite sure what they wanted to find out, we are unable to say. It is enough to admit at the present time coke pig iron in the history of iron making, that they, to quote the language of the old the coke strike threatens to reduce the make hymn, "move in a mysterious way their wonders to perform," and that nobody outside the membership seems to know just what they are trying to accomplish, or by what method they are seeking the results they are after. This may be very clever, but, like most clever things, it seems to be defeating pression that the Defense Association is a combination to advance the prices of stoves by producing artificial scarcity; that to this end they are forcing the men into idleness all over the country, and that the game of battledoor and shuttlecock they are playing with the boycotted St. Louis patterns is merely a subterfuge to induce the men to strike, and so relieve the manufacturers of the moral responsibility of a lockout. The result is that a great many journals throughout the country which were originally in sympathy with the position of the manufacturers in opposing the demands of the St. Louis molders for an unreasonable increase in wages, and who applauded the Defense Association for standing by their St. Louis Associates, are now taking sides with the men and are rapidly withdrawing from the manufacturers the desirable sup

The business of the National Defense Asso

urers in the absence of a better knowledge of what that position is and to what it is likely to lead.

We think the Defense Association are making a mistake in not defining clearly the issue of this contest, and stating what it is they are contending for. If the situation and outlook in the stove trade are such as to forbid an increase in wages, they are pernected with the great stove strike have been feetly right in sustaining the manufacturers who refuse to grant such an increase when one gains from striving to keep advised of it is demanded by the men. If the present stock of stoves in the country is so great that continued production by the leading foundries would tend to congest the market and invite a competition destructive of all profit, they are perfectly right in inviting the cooperation of all manufacturers in an effort to reduce production by a temporary suspension of operations. If the situation is such as to render it necessary that wages in the stove foundries should be reduced, the Defense Association have a per fect right to fix a lower scale than that which now obtains, and set in motion the neans of enforcing it. In fact, in any welldefined position which had the warrant of an agreement of the manufacturers would give it, the Defense Association could count upon the approval and support of an intelligent public opinion. But their position is weak tion the lockout at Detroit. Following as it in that they seem to be fighting without any definite issue in view, and nobody knows whether what they are seeking to accomplish is just and proper, or wholly the reverse.

> If the members of the National Defense Association know what they want, we think they owe it to themselves to define their position, so that it might be understood by the press and public. To this end it is not necessary that they should proclaim all their movements or betray the secrets of their councils, nor would this be expected. But since the strike has attained almost national proportions and entails more or less suffering to a great many thousands of people, it is not asking too much that they define clearly the issue which exists between themselves and the molders' union and that they present an ultimatum which the men may accept or reject as they see fit. The association has a perfect right to defend the legitimate interests of the trade in any proper and reasonable way, and may even demand the emancipation of all the foundries in their membership from union control, provided they give reasonable as surance that the men who abandon the union will receive generous protection and fair consideration. If the facts warrant it, they may even say that the terms of Again, peace are a recognition of the supremacy the National Defense Association, and that, until its rules are subscribed to by ship of the association will remain closed This, however, involves a clear definition of what the rules of the association are; and so far as these affect the men, if there be any they are absolutely unknown. In a word, is nothing undignified nor dangerous in not afford to do. The unanimous public sentiment which has condemned the sympathetic strike will, with equal emphasis, condemn the sympathetic lockout: and however strong the National Defense Association may be, it cannot withstand even a mistaken public opinion if, misjudging its position, it condemns it. A clear and distinct announcement of the demands of the National Defense Association would very much strengthen its position.

> > The Railway Age, the leading authority on the current statistics of railroad building in this country, has gathered data which justify its making the prediction that the complete record for the year will show an addition of at least 10,000 miles of new railway, with the possibility that it may reach 12,000 or 15,000 miles. Earlier in the year our contemporary put it at 8000 or 10,000, while Poor put himself on record with an estimate of 12,000 miles. Some doubt is expressed concerning the possible effect of the Interstate Commerce law. The earnings of the railroads thus far reported for April are certainly not discouraging to that interest. In fact, the opinion is gaining ground that the passage of the law was pretty generally seized by the railroad officials as an opportunity to advance rates, adopting the expedient of giving themselves latitude enough to come down. They are doing so now to a considerable extent, but even these are on a somewhat higher basis. So far as can be judged now the operation of the act will not be to discourage the building of branches and the paralleling which had formerly been sent to Swansea, Wales. is going on West and South.

It is reported that the men at the fur-naces of the Brier Hill Coal and Iron Company, Youngstown, Ohio, have struck for semi-monthly payment of wages.

Active preparations are now being made lorado 10,000 port of public opinion. Much as we may at Port Henry, N. Y., to put all the five fur- and renewed movement of pig iron is the for the new navy.

#### Obituary

W. C. DE PAUW

Mr. W. C. De Pauw, one of the most enterprising manufacturers of the United States, died at Chicago on the 5th inst. having been stricken with apoplexy while visiting that city on business. Mr. De Pauw was a resident of New Albany, Ind., whose nanufacturing industries were largely Wash up by him. He was born at Salem. ngton County, Indiana, in 1821. His father was Gen. John De Pauw, a native of France and a member of a noble family, who becam an eminent citizen of the pioneer period of Indiana. Gen. De Pauw was not able to give his son much of a start in life, how ever, but left him to become the architect of his own fortune. In 1844, when W. C. De Pauw was a poor man, he was elected clerk of the courts of Washington County, and rom his savings in office he laid the founda ions of his wealth. He entered the banking usiness in 1854 and became president the bank of Salem. In 1861 he removed to New Albany, and became one of the neaviest ontractors of army supplies in the West, He erected the large plate-glass factory at New Albany, and under most discouraging circumstances succeeded in establishing the ousiness, which was new in this country, on a firm basis. Subsequently he became in-terested in the New Albany Rail Mill Com-pany and the Ohio Falls Iron Works, as well as in woolen and cotton mills, foundries, and other manufactories at that point, at Louisville and at Indianapolis, being a large stockholder in the Indianapolis Rolling Mill Company. He continued his connections with the banking business, and at his death was interested in a number of banks in In diana and at Louisville and Chicago. Born and reared in Indiana, and residing there during the whole of his life, he was probably its wealthiest citizen when he died. He was its wealthiest citizen when he died. also its most liberal citizen, having given vast sums in charity and for religious and ducational purposes. His donations to the Methodist church aggregate \$1,000,000, and his will provides for a bequest of not less than \$1,500,000 to De Pauw University, at Greencastle, Ind., to which institution he had already given over \$300,000. His sons are energetic and capable men of affairs, by whom his vast property will be prudently managed.

#### Fracklaying in the First Four Months of 1887.

The evidence which was presented one onth ago that the work of railway construction during 1887 is to be very large is fully supported by the returns of tracklaying refrom January 1 to May 1 there have been laid in the United States no less than 1564 miles of new main track, on 65 different lines, in 29 of the States and Territories. This is an addition of 524 miles during the last month, and shows a total which has never before being equaled during the same period, with the exception of the first four months of 1882, when some 2300 miles of new track were reported. The total length of new lines for that year—1882—was 11,568 miles, by far the greatest mileage laid in any one year. During the first four months of 1886 our reports showed only 666 miles of track laid, although the total mileage for that year was about 8200 miles. There have already been laid this year about three and one third times as much mileage as was credited to the corresponding months of last year, and more than one-half as much as the new mileage for the entire year While the effect which the Interstate Commerce law will have upon new construction is still a matte, of some doubt, we now feel warranted, after taking a survey of the entire field and noticing the great number enterprises either in progress or projected, in venturing the prediction that the complete record for the year 1887 will show an addition of at least 10,000 miles of new railway, with the possibility that it may reach 12,000 or 15,000 miles. Indeed, the probabilities now seem to indicate that the railway building during 1887 will exceed that of any pre-

rious year. Of the 1564 miles shown by our records more than one-half has been built in Indian Territory, Texas, Kansas and Colorado. Large additions are to be looked for in the next month or two in Dakota, Nebraska, but lately disappeared the work of tracklaying has now begun, although, as has been suggested, extensive preparations have been made in large portions of the Northwest, and from this time until winter sets in every day will see the addition of many miles of steel track in States and Territories which thus far do not figure greatly in the showing. In short, 1887 seems certain to pass into history as a year of extraordinary activity in railway building, and consequently of great activity and prosperity in the lines of industry which are intimately onnected with that work .- Railway Age.

The Duluth and Northwestern Smelting Company have been organized at Duluth, Minn., with a capital of \$2,500,000, and will establish their large copper and sil will establish their large copper and silver smelting works, which are intended to be the largest in the country. This company consists of Detroit, New York, Boston and San Francisco capitalism. It is under contract with the owntalists. ers of the Anaconda mines, of Montana, to smelt their entire product, much of which It is stated that the company will expend at once \$000,000 in the erection of works. It is expected that 1500 men will be employed.

We are informed by the York Iron Company, of Black River Falls, Wis., that on April 5 the railroads put up freights and caused nearly a total suspension of shipments of pig iron. Lower freights, however, have since been secured in some cases,

#### WASHINGTON NEWS.

(From Our Regular Correspondent.)

WASHINGTON, D. C., May 10, 1887.

The members of the Interstate Commerce mmission will return to Washington on Monday, and will resume their deliberations Their visit to the South has thrown much light upon the practical workings of a system of regulation of interstate commerce, which they will be ready to formulate by the time of the meeting of Congress. It is understood that they will make a visit to several of the more important railroad centers of the North for conference with railroad men and shippers. They find that this is the more effective method of getting at results than by the purely speculative treatment of abstract propositions pro-pounded for the sake of drawing out opinons. It is understood that the Commission disposed to make no more suspensions, but to allow the law to stand and to act upon a practical case of violation. order to avoid the confusion resulting from a promiscuous submission of papers by railoads and industrial establishments a circular has been prepared requiring the transmission with all packages a statement of subjects covered. At present there is about a ton of papers which have not been handled for want of force. The time of the clerks has been used in getting matters into some sort of working order by the return of the Commission so that they may get down

#### CARLISLE AND THE TARIFF.

The reference by Speaker Carlisle in his peech before the Kentucky Convention to the Tariff issue is regarded among Senators, many of whom are still in the city, as serving notice that there will be a renewal of that issue in the next Congress, which vill make it a prominent question before the people in the campaign rapidly approaching. It is not improbable that the position of Mr. Carlisle will lead to complications in his choice for Speaker of the next House. A movement was on foot, soon after the adjournment of the late Congress to secure some expression from him of his position with reference to the placing of a representative tariff Democrat on the Committee on Ways and Means, He declined however to give any intimations as to what he might do if re-elected. The Whiskey interests of the West will have much to do with shaping this matter. It will resolve itself into a this matter. It will resolve itself into a question of the distillers as against the manufacturers. Mr. Carlisle and his friends will press every point, and with the weakening of certain Republicans in New England and the West, they may be able to compass their point of a reduction of revenues by means of a reduction of protective duties.

#### THE BETHLEHEM PLANT.

Secretary Whitney expresses much regret on account of his inability to go to Bethle hem to view the progress being made on the great plant for the manufacture of gun steel and armor plate under the contracts with the Government. Commodore Sicard, chief of the Bureau of Ordnance; Commander McCormick, inspector of ordnance at the Washington Naval Arsenal, and Civil Engineer Peary took their departure yester day, and will report. The Secretary, how-ever, has not entirely abandoned the idea of giving these works a personal visit, but hopes to be able to do so later in the season. He is taking a great interest in this work, and expects to secure enlarged appropriations from the coming Congress for additional ships and additional quantities of material. It now looks as if South Bethlehem will be come the great center of manufacture of steel in every variety required by the Government for army and navy ordnance and armor for ships and coast and harbor defenses. The almost unlimited means and enterprise of the Bethlehem company gives the Government a guarantee of prompt de livery and superior results. Commodore Secord and party returned to-day, and give a very favorable report of their trip and of the work that may be expected when the plant is fully completed.

#### ARMAMENT FOR THE CRUISERS

The last of the three to-inch guns for the new cruisers has been completed at the Washington Naval Arsenal. The tests will Montana, Missouri, Wyoming, Oregon, Georgia, Alabama and Florida, as well as in the States already named. Indeed, in nearly all of the Northwestern, Western the Whitworths, of England. No more the works are the works and the states already named. Indeed, in the Whitworths, of England. outhern States numerous extensions guns of large caliber will be made, as the are under way. In the more northerly part is supply of metal by the Bethlehem Company, of the country where snow and frost have it is expected, will be ready by the time there will be a demand for it for the vessels now under way. The work on 6-inch calibers will continue as required, as the tubes for this class of ordnance have been furnished by home producers, like the Midvale Company. It is safe to say that no more foreign steel will be required by the United States will be required by the Government for the manufacture of ord-nance for the navy. The ordinance bureau has just finished the two 10-inch steel gun carriages which will be used for mounting the large guns.

#### THE STEM OF THE CRUISER BALTIMORE.

A telegram has been received from the Stanton Steel Company, at Thurlow, Pa., announcing the casting of the upper part of the stem and stem-post of cruiser No. 3, the Baltimore, the keel of which has been laid at Philadelphia. The test will be made immediately by Lieutenant Kaufman, the officer who has been ordered to that duty, and who will report forthwith, so that there may be no delay from that cause.

Commander Evans, Chief Steel Inspector is now in Pittsburgh giving his personal attention to the tests of steel plate being rolled in that city. Lieutenant Milligan is engaged in collating the results of tests in the office here. These tables will constitute a very valuable series for use in future metallurgical operations in the manufacture of material, both for the Government and for private uses. Their immediate value to the Government will be that they will give a connected history of the material which will enter into the building

#### Special Notices.

BUSINESS OPPORTUNITIES

#### To Manufacturers.

BELOIT, WISCONSIN.

inhabitants. locat-Valley, within three hours' ride to Chicago and Milwaukee, over

competing railway lines, offers large inducem to manufacturers Close proximity to hard and soft lumber, iron mines and furnaces; cheap coat; unsurpassed facilities for receiving and shipping by rail; lowest freight rates; no switch charges; superb water power; cheap homes; college, schools, churches, and all social advantages; intelligent and contented labor, male and female; best climate in the world to work in gas and electric light ; water-works sufficient for 50.000 population. For particulars address,

J. B. DOW, Sec'y, BELOIT BUSINESS MEN'S ASSOCIATION,

POR SALE, CHEAP—Small Manufacturing Site of Rock River, Reloit, Wis., frame building, 50 x 60 200 inches water, about 20 horse power, water wheel and jack. Price, \$3000. Address J. B. DOW, Beloit, Wisconsin.

Beloit, Wis

IN ORDER to give exclusive attention to and extend its manufacturing facilities for which its present location does not give required room a company long established and admirably located in a western city, at present engaced in Manufacturing and Joubing Plumbers', Gas Fitters', and St am Fitters' Supplies, will dispose of at avorable figures its leasehold and stock of goods and unterial held as de ders or jobbers of such goods, with all unfided or accepted orders for same, existing at date of disposat. Provision for the lat er, if of such material as this company proposes to manufacture, can be mide at prices and on terms satisfactory to the purchaser if so desired. A continuance of the business without interruption and disappoit tment to the trade being this company's wish. Purchasers can take immediate possession of a paying business, with a trade a cured. Susness established 2 years; size of building, 44 x 110 inside; five floors with light on three sides; every floor available for use; entire building warmed by steam; offices large, convenient and well lighted; large brick vaults on ground second and third floors, and entire building lighted by electricity and gas. Such permanent fixtures as Hollers, Engine, Heating and Lighting Apparatus, Power El-vators, &c. or any part of same, will be neltided in sale if desired. Present trade chiefly in New York. Pennsylvania, Ohio, Indiana, Michigan and Canada, with large retail trade in the immediate vicinity, as isfactory terms of payment with reliable purchasers, and information of past and present business needed for its continuance fully and freely given address, in person or by letter, WORSWICK MFG. Co...

April 2, 1887.

# ST. PAUL

#### NEWPORT IMPROVE MENT COMPANY. CAPITAL \$2,000,000.

This Company offers a BONUS Liberal Inducements and the Finest Location in the Northwest to any Manufacturing Concern that will remove their plant to St. Paul, Minn., or start a new manufactory.

Send for Circulars. Correspondence Solicited. Address

FRED. 8. BRYANT, Sec'y, ST. PAUL, MINN. [Bank of Minnesota Buildind.]

#### For Sale,

For best of reasons, a cl-an stock of Light and Shelf Hardware and Sporting Goods that will invoke about \$6000. The fleest store front and fitted up room of the kind in a city with a population of 4,500 and is one the largest manufacturing and railroad centers in State of Pennsylvania. Is and atways has been doing a pasting business and now enjoys the most lucrative trade in Builders' Hardware Clerk in the city. An exceptional opportunity for a young man. In the employ of the store is the best liked hardware clerk in the city, hard worker, comperent to run the business, the roughly honest kind in manner, in best of repute with the contractors, and working for a moderate salary. Address

The Plant and Stock of an Implement Manufacturing Commany, located in Northern Lower, established

"REASON,"

Office of The Iron Age, 66 and 68 Duane St., N. Y.

#### For Sale.

Foundry, 100 X 40 ft, and Machine Shop 60 X 1 ft., both with water privilege; also Japan and Packing House 62 x 22, Stove Storehouse 50 x 14 and Storehouse and Box Shop 30 x 20. All in good repair and running order; five minutes from steamboat and ten minutes from two railroad stations. Address

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FOR SALE. To Close an Estate,

A hardware stock of \$15 000 in the best busine city in Michigan. Business established twenty-five years. Address "HARDWARE STOCK," Office of The Iron Age, 66 and 68 Duane St., New York

#### For Sale,

Hardware, Stove and Implement Business in the "Boom" City of the Eastern Indiana Natural Gas Terr tory. The city has a population of Socio and will double its present population within two years. Business has been established over ten years, and is the largest retail hardware store in Eastern Indiana, and does a business of \$10.000 per year. Present and deep some store in Eastern Indiana, and deep a business of \$10.000 per year. Present largest reason for selling. This is manufacturing business is reason for selling. This is manufacturing to since it was a selling to the form of the Iron Age, 66 and 68 Duane Street, N. Y.

#### Alabama's Mineral Belt.

Parties wishing information about, or investment in, Alabama Mineral, Lumber or Agricultural lands, will please address, with stamp,

EDWARDS & ARNOLD.

Talladega, Ala.

#### Special Notices.

BUSINESS OPPORTUNITIES.

#### FOR SALE,

The Melvin Sewing Machine Co.'s Factory an grounds, located in Chillicothe, Ross Co., Ohio and adjoining the depot grounds of the C. W. & B ed in the Rock River and Scloto Valley Railroads. The main building is of brick, 133 x 33 feet; three stories, slate roof well-lighted and floors 6 in. thick. The Engine Boiler and Japan rooms and Blacksmith shop, are all of brick and covered with tin. The whole building heated by steam and lighted by electricity It contains a 45 horse-power Reynolds-Corlis Engine, a 75 horse-power Babcock & Wilcox Boiler and Edison Dynamo, all in good condition One house and lot and three vacant lots, all adjoining the factory grounds. This is a desirable property for manufacturing purposes, and will be sold at a bargain. For further particulars call on or address

NELSON PURDUM. Receiver. Chillicothe, Ohio

## FORT SCOTT, KANSAS.

Attention of Capitalis's and Manufacturers is called to the numerous advantages exis ing at Fort Scott, Kansas, which will soon make this city one of the most important manufacturing and commercial points in the West, and enable it to maintain its present supremacy over all other cities in this State. The natural facilities are unequaled. Coal of the best quality is sold at \$1 so to \$2.00 per ton; stack, so cents to \$7 per ton, delivered. Abundance of stone and brick, best quality. Natural gas is fully developed and used for all purposes. Facilities for transportation and distribution are unequaled, being sire dy the function of five trunk railways. Invect communication with lumber regions of Missouri and Arkansas. Correspondence solicited.

SECGETARY BOARD OF TRADE.

SECRETARY BOARD OF TRADE.

#### BESSEMER STEEL COMPANY, Ltd., Office, 218 S. Fourth St.,

PHILADELPHIA, December 1, 1886 PHILADELPHIA, December 1, 1886.

A demand for steel blooming mills of small size having arisen, we have decided to grant licenses for movable feed tables having driven feed rollers under the George Fritz patent, No. 133.771, dated December 10th, 1872, hereafter, with reference to the product of the mill.

Licenses will therefore be granted under the said patent for mills hereafter erected and put into use upon the payment of \$1000 down and a royalty of ten cents per ton for all metal rolled thereon in excess of \$50,000 tons in any year.

These terms are extended only to mills hereafter erected by persons procuring licenses before said mills are put into use.

All infringers of this patent will be vigorously prosecuted.

JOHN M. KENNEDY, Secretary,

## FOR SALE.

The Old Colony Iron Co., of Taunton, Massachusetts, offer for sale their Rolling Mill. Nail Factory, Machine Shop, Foundry, Cooper Shop, Lands and Tenements, situated in the town of Somerset, on the Taunton River. 4 miles above Fail River. Said Mill contains, 7 Double Puddling Furnaces, i Scrap Furnace and 4 Heating Furnaces, with Squeezers, Rolls, and all the necessary apparatus for converting the product of said furnace into nail plates. The Nail Factory contains 81 Nail Machines, with a capacity of cutting all the plates the mill rolls.

The above property is situated on a wharf where vessels drawing 18 feet of water can discharge coal and iron directly to the mill.

They also offer for a le their Tack Plate Rolling Mill. Shovel Shop. Water Privilege, Land and Tenements situated at East Taunton, Mass. For further particulars, address

O. A. WASHBURN, Jr., Treas.

#### Providence, R. I

For Sale or To Lease,

at Perth Amboy, New Jersey, adjoining wharves of the Lehigh Valley R. R. (20 feet of water, admitting largest ocean steamships without obstruction of any kind), 1800 feet dock front by 4000 feet in depth. This property is crossed by the Lehigh Valley Raffroad, the Pennsylvania Railroad and the N. J. Central Raffroad end, besides being on one of the finest Harbors on the Coast, is also on the line of the Delaware and Raritan Canal Towing Line. Thirty feet of Water in front of property, and three Rafiroads, Lehigh Valley, N. J. Central and Pennsylvania, all crossing the tract. See map on page 41 Address WILLIAM T. MEREDITH, No. 48 Wall St., New York.

The Flant and Stock of an Implement Manufacturing Company, located in Northern Iowa; established five years: Manufactures popular and well intro; duced; Machinery ali new and of modern design Substantial brick buildings; sufficient for large business; use unfailing water-power at minimum cost. Good raliroad facilities. Thriving town and removed from labor strikes. Address "IOWA." from labor strikes. Address
"IOWA,"

Office of The Iron Age, 56 and 58 Duane Street, N. Y

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Partner wanted with \$20.000 to double present capacity. Established manufacturing business special and staple goods; first-class reputation running light and day, and business increasing None but principals need correspond. References given and required.

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An Incorporated Company offers for sale State Rights to manufacture, and sell a valuable Patent Boiler (for house-heating). Hundreds in successful operation, which can be referred to for full particulars.

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BUSINESS OPPORTUNITIES.

### MUNCIE, INDIANA,

s surely blessed by nature, and destined to be come one of the great manufacturing cities of the West. It is already acknowledged by experts to be equal, if not superior, to Findley, Ohio, as a natural gas-field. Its shipping facilities are unsurpassed for local and through rates East, West, North and South. It has all the modern improvenents of the largest cities-Water and Gas Works. Eason Incandescent and Brush Electric lights. Its healthy and beautiful location makes it a desirable home. Warren, Jones & Gratz have moved their immense Bagging F. ctory from Brooklyn, N. Y., to Muncie, and several other manufacturers in Glass, Iron and Wood are nego-tiating with the Board of Trade and private citi zens for the same purpose. Its inhabitants are energetic, ans famous for their liberality and sociability, and will cordially welcome all industrious prople who wil join them in their progress ve march. All information desired can be had by addressing

SECRETARY BOARD OF TRADE,

## TO MANUFACTURERS.

TO MANUFACTURERS.

The Business Men's Association of the city of Fond du Lac, Wis., desire to enter into correspondence with firms, corporations, associations and business men generally, who are seeking new locations for aireacy constructed plants or the location of new ones. Good building sites, cheap; railroad connections the best, having eight lines; water communication with Great Lakes by lake Winnebago and Fox River.

Al manufacturers treated most liberally by railroads; forty trains daily. The healthiest city in United States, as shown by government statistics. Holly System of water works supplied by artesian wells, giving best fire protection, and furnishing water unsurpassed in the world.

All Kinds of timber in close proximity by rail and water. Fue cheap; two railroads running directly to coal fields of Illinois. Good schools; good churches; good society; excellent public library. Living and labor cheap. No labor troubles in factories.

In short, the best and most healthful locality for manufacturing in the West.

Come and examine personally, or write to

C. H. BENTON, Ch'm Com on Mftrs.'
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#### A PARTNERSHIP

in a first-class Retail Hardware Business, in a la ge manufacturing city, in New York State, is offered for sale. This is a very good opportunity for some one to connect himself with a well-estab lished and prosperous concern. Capital required, \$12 000 to \$15,000. Full information will be given to responsible enquirers by addressing

"S. C. C.," BOX 101,

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Over 5000 Acres of Land underlaid with Coal, Iron Ore and Limestone; a Blast Furnace and 24 Coke Ovens; 3 or 4 miles of Railroad connects the property with the Cincinnati, Washing-

imore Railroad. H. R. KNOTWELL, Agent. Lewistown, Mifflin, Co., Pa A rare chance to buy a moving stock of

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POR SALE - Stock of Iron, Steel, Wagon and Carriage saterial, both iron and wood; also, large-convenient Store Room, located in growing manufacturing and now booming city of Quincy. Iii., the second city in the state, population about 40.000; quite a railroad centre, and on the great Misissippi River. Excellent traveling territory on every side; for fine, rich country scarcely equaled. Business established twenty years. Money made every year. The only store of the kind in the city. Reason for retiring, bad health. LEMLEY BROTHERS.

LEMLEY BROTHERS, Quincy, Illinois.

#### FOR RENT, VALLEY ORGE MILL AND WA ER-POWER.

House. The water-power's known as one of the best in the State. The property was occupied for many years as a Woolen and Cotton Manufactory, but is adapted to general manufacturing purposes. particulars, address
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FOR SALE.

#### A MANUFACTURING PROPERTY IN DAVENPORT, IOWA.

This property consists of Foundry and Machin hop, and is admirably located, so far as labor, ma-erial and transportation are concerned, for manu-scripting purposes. acturing purposes. Destrable parties having capital or establish-less will receive the encouragement of loca ness will receive the seasons explain or established be of Trade and citizens' society, the "Adva oe Clu This is an unusual opportunity for partice dear to establish a Lusiness in the West, where every couragement will be given, and it is especially to any transh of machine or hardware mufacture. Address

JAMES P. DONAHUE,
Davenport, Iowa,
eferences: Henry R. Worthington, New York
zens' National Bank, Davenport, Iowa.

MANAGER for a well-equipped Machine Shop M and Foundry, incorporated under the laws of the State of New York, who can invest ten or fifteen thousand dollars with services and influence trade; a splendid chance for the right man. Address "CONFIDENTIAL,"

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The Iron-Work of fifty Ore Cars. Standard gau 0-inch wheels; 4% tread; 4-inch iron axles. All in good condition, and in lots to suit.

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HENRY CAREY BAIRD & CO.,

Industrial Publishers, Booksellers and Importers, 810 Walnut st., Philadelphia, Pa., U.S.A. Illinois River Improvement.

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Room 25, Honoré Building,
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Sealed proposals, in duplicate, will be received
at this office until 12 o'clock, moon, standard time,
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Iron and steel necessary for the Lock Gates and
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oximate amounts required from the state of the state of the state oximate amounts required from the state oximation apply at this office.

Thos. H. HANDBURY,
Major, Corps of Engineers,
United States Army, Approximate amounts required :

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A FIRST-CLASS MAN to take charge of MACHINERY FOR MAKING HORSE SHOES, Permanent employment. Also one or two BOAT SPIKE MACHINES.

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In every manufacturing town to sell DuPlaine's Plumbago Babbitt Metal.

Very liberal discount allowed and every inducment given you to make sales. Remember these are the Best Anti-Friction Metals made.

Address E. A. C. DUPLAINE, Chicago, Ill.

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Ten (10) No. 2 Siemens' Regenerative Gas Lamps, with Factory Fixtures and Reflectors complete and in order; only used three or four months. Will be sold cheap.

Danville Nail & Mfg Co.,

Danville, Pa.

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in that city and Southern roints.

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WANTED BY A PHILADELPHIA HOUSE a first-class HARDWAKE S LE-MAN; also a young man of highest ability to travel All communications confidential. Address 'ELYOR,' Office of The Iron Age, 66 and 68 Duane st., N. Y.

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ENT. to take charge of rolling mill in the
South making neil plate and merchant bar; state
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2 30 g 5	0.0	0.0	Nes		* 1 5 7 5		118
2 30 x 5	5.5		1600		*** ***		1 1 2 1 2
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L & HOEse	11	ingine a	na B	o ler, s	econd I	lang	80
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# Trade Report.

#### British Iron and Metal Markets.

[Special Cable Dispatch to The Iron Age.] LONDON, WEDNESDAY, May 11, 1887.

Scotch Pig .- The market has been unchanged, Scotch Warrants closing 41/, as against 41/21/2 last week. Makers' brands

Coltness, alongs	me, unasgnw.									1
Langloan, '							٠		٠	
Hengarnock, '	ALTEROPORTS.									
Gartsherrie. '	A R R CROWN TO AN .									
Shotts, '	SEC INCIDES.									
Dalmellington,	Ardrossan.									
Carnbroe, '										. 4
Eghnton '	4.6					0	۰			. 4
Summerlee										E

Brssemer Pig.-The market is un changed. We quote W. C. Hematites, Nos. 1, 2 and 3, 43/ @ 45/ and 42 /6 for later delivery.

Cleveland Pig.-The market has not changed, with closing quotations at 37, for No. 1 Foundry: 36/ for No. 2: 34/ (6 34/10 for No. 3, and 33/ for No. 4 Forge. Bessemer Billets.-Bessemer Billets,

4 x 4 inches, are 77/@ 77/6.

Bessemer Blooms —The market is still irregular. We quote · Blooms, 7 x 7 inches,

Bessemer Crop Ends .- We quote run of mill 50/ @ 52/.

Manufactured Iron.-The market is irreguar. We quote :

Staff, Ord. Marked Bars.... Medium " ... Common "Common Common Best..... Medium Medium Common.
Sheets, 20 W. G. and under.
Ordinary Best.
Common. 6 15 0 @ 7 5 6

Welsh Bars are quoted £4. 5/ @ £4. 17/6. Steel Rails .- The market is unchanged. with prices at £4 @ £4. 5/.

Old Rails.-The market is irregular. with closing quotations for Tees and Double-Heads, c.i.f. New York, 60/@ 65/.

Scrap.-With an irregular market, quotations are at the close 55/, c.i.f. New York for Heavy Wrought Scrap.

Copper.-The market is unchanged Chili Bars closing £39. 5/@ £39. 10/, and Best Selected, £44. 10/ @ £44. 15/.

lin.-The market is firmer, spot clos ing £104. 5/ @ £104. 15/ and futures £104. 15/@ £105. 5/.

Tin Plates.-A good business has been done during the week, the demand being good. Prices are tending upward.

Spelter .- The market is unchanged. We

quote £14. 2/6. Lead.—We quote £12. 10/@ £12. 12/6 for

Common English Pig.

Freights.-Steam freights from Glasgow to New York are 7/6.

#### Financial.

Office of The Iron Age, Wednesday Evening, May 11, 1887.

In trade and finance during the past week the general features are slightly higher rates for money, excited speculation in coffee, a tumble in the price of cereals, a heavy decrease in the surplus bank reserve and larger bank clearings, some increase in east-bound shipments from Chicago, a continued accumulation of coal at tidewater, uneasiness caused by labor strikes, actual or threatened, and many conflicting opinions respecting the operation of the Interstate law. As a whole the outlook favors a good spring business, though more active than profitable in most lines of enterprise. The Garret Roach and George E. Weed, iron full opening of navigation on the lakes and canals will be the signal for a ship. The Importers and Grocers' Exheavy forward movement of freight, both East and West, large quantities of grain and general merchandise having been detained to take advantage of lower rates. The Welland Canal was opened May 4. An appeal from the New York Central. Lake Shore, Michigan Central and other roads, made to the Commissioners, represents that the enforcement of the long and short haul clause would work greatlinjustice to them and their patrons. Up to this time 44 railroad companies have filed with the Interstate Commerce Commission formal petitions asking to be relieved from section 4 of the Interstate Commerce law, and a much larger number has been received from trade organizations, private corporations, and individuals protesting against the suspension of section 4 in particular cases. In the region of the lakes there is much rejoicing that the Commissioners refused to suspend section 4 as requested by the Northwestern roads. The Transcontinental Railway representatives concluded their conferences at Chicago without getting Canadian Pacific or Pacific Mail to agree on differential

The Stock Exchange market was dull and uninteresting until Tuesday, though irregular. Bear operators were assisted by reports of trade disturbance caused by the Interstate law, while the other side were strengthened by improved railroad carnings

statements afforded no stimulus. On Tues day there was a better feeling, and in the late trade the tendency was upward except Reading. To-day the market was again stronger, but dull.

United States bonds are quoted as follows:

		22000 0000	4000		-	-		1				
		38										
U.	S.	416s, 1891,	cot	apon						1101/4		
U.	S.	48, 1807, 0	2011	pon.						129	60	1291/
U.	S.	Currency	68,	1895						12534	(it)	
U.	8.	Currency	tis.	1896			 			128 13	(0)	
U.	8.	Currency	tis.	1897							0	
U.	8	Currency	68,	1898		- 0						
U.	8	Currency	rig.	1899						13614	(0)	
			-		0				-			

General trade has been moderate, but in speculative circles enlivened by unusual excitement. Sales of coffee on Saturday reached the unprecedented total for a single day of 60,000 bags, at an advance of 3/8 ¢ @ 1/2¢. Wheat experienced a sharp decline, but is stronger; cash trading limited by extreme views of holders. Cotton quiet at the recent advance. Petroleum steady. Ocean freights quiet; grain charters few.

The weekly bank statement was a surprise in financial circles, showing a decrease of \$2,617,325 in surplus reserve, and an increase of \$4,808,400 in loans, with a corres ponding increase of \$4,947,300 in deposits. The surplus reserve now stands at \$4,522. 600, compared with \$11,113.525 one year It is explained that a large amount of sterling bills have just been drawn by J. & W. Seligman & Co. and by Kidder, Pea body & Co. against blocks of railroad bonds placed abroad, and that he vy credits to the account of the latter house by some of the banks increased the "deposits" item, and caused the large apparent loss of surplus.

The bank clearings continue to look well. the total for 36 cities last week showing an increase over 1886 of 12.1 per cent. Outside of New York the aggregate gain was 26.8 per cent. Five cities reported decreases.

Of those showing increases Omaha figures for 106 and Boston for 31.3 per cent. In consequence of the dullness of the stock speculation. New York gained only 5.1 per cent. Commercial paper is in better demand. We quote 60 and 90 days' bills 5 per cent., longer dates 51/2 @ 81/2 per cent. According to the Custom House reports the exports of specie from this port during the week were \$526,761, making a total since January 1 of \$9,000,000, and the import were \$187,000; total since January 2, \$4,902,440. The Saturday Half-Holiday law takes effect May 25. Mr. Dyett, counsel for the New York Clearing House Committee, says: 'The law will operate on all bills of exchange, checks and promissory notes made day celebrated as a public holiday, to make them presentable for payment or acceptance on the secular or business day next succeeding said Monday, in place of the preceding day at present legally designated. Some apprehension is felt as to its complicating the immense business daily transacted at the banks, including Saturday, when the beaviest dealings usually occur.

The imports of merchandise at this port during the week were larger, the valuation being \$9,111,483, making the total since January 1, \$165,532,833, as compared with \$154,165,000 for the corresponding period last year, and \$149.218,000 in 1885. The exports are \$200,000 below those of last week, the valuation being \$5,517,742, making a total of \$105,138,000 since January I against \$107,262,000 for the same time last year, and \$121,973,000 in 1885. The returns of foreign trade at this port for April ket by the selling on the part of the Wheelshow an increase of \$4,344,212 over the corresponding month last year, and the ex ports in decrease of nearly \$4,000,000-indicating a heavy balance of trade against the United States. For ten months, ending \$41.50. 30th ult., the imports at New York amount to \$373,500,000, exclusive of specie; increase, compared with last year, \$25,500, 000; exports for same time, \$267,000,000 increase, \$7,832,000.

Charles S. Smith was elected president of succeed James M. Brown, resigned, and shipbuilders, were elected to the memberchange, of New York, have done little or no business for some time past, and will be placed in the hands of a receiver. John R. Foley is engaged in the formation of a savings bank, with a capital stock of \$500,000, to be located near Eighth avenue and 125th street. It is authoritatively stated that Mr. George J. Gould will become president of the Pacific Mail Steamship Company at the annual meeting on May 25.

Business failures for the week : Two barbwire manufacturers in Illinois and the Merritt Fruit Company, of this city. The latter attribute their embarrassment to interruption of business by the recent strikes. Copeland & McLaren, pig iron importers of Montreal, are reported failed, with about \$235,000 liabilities.

The President to-day appointed James W. Hyatt, of Connecticut, to be Treasurer of the United States, to succeed Conrad N. Jordan, resigned. Mr. Hyatt for 10 years was Bank Commissioner of Connecticut.

The new Western National Bank, officered by ex-Secretary Manning and ex-Treasurer Jordan, is now open for business.

Messrs. Gordon, Strobel & Laureau, of Philadelphia, who are building a 13x80 foot furnace at Birmingham, Ala., for the Sloss Iron and Steel Company, successors to the

#### NEW YORK.

American Pig.-No new features whatever have developed during the week, the market remaining very quiet and fairly steady. Inquiries are few and far between and call only for small lots, while there is no appreciable pressure to sell. A false impression may have been created through the offering during the week of a 500 ton lot of off-color bright Southern Iron, represented to be No. 1, at \$20. The Southern furnaces which reach this market are generally well sold up, some of them being far behind their deliveries Of the Lehigh furnaces a few have no contracts beyond the end of June, but they are content for the present to await developments before making offerings for future delivery. We quote \$21 @ \$21.50 for No. 1 Foundry, \$19.50 @ \$20 50 for No. 2 Foundry, and \$18 @ \$18.50 for Gray Forge.

Scotch Pig .- The market is very dull, and occasional lots on dock are picked up at concessions. We quote for round lots, to ar rive: Coltness, \$21.75 @ \$22.25; (Flengarnock, \$20.25 @ \$20.75; Shotts, \$21.50; Gartsherrie, \$20.75 @ \$21; Carnbroe, \$21 @ \$21.50; Clyde, \$20 @ \$20.50 : Summerlee, \$21.25 @ \$21.75; Dalmellington, \$20 @ \$20 50, and Eglinton, \$19 75 @ \$20.25.

Bessemer Pig.-There have been some nquiries for Foreign, but the scarcity of freight-room makes early deliveries difficult. As much as 14/ has been paid recently from Barrow. For delivery second half of 1887, Foreign has been offered at \$19.75, ex ship New York harbor.

Spiegeleisen.-The market is dull and weaker, with 20 % Foreign nominally \$27 @ \$27.50. There has been considerable inquiry for small lots of Ferromanganese, which we quote, for 80 %, \$60, which could be shaded under circumstances.

Bar Iron.-The market is very dull, and ccasionally low offerings are heard, although the majority of sellers insist upon former quotations. We quote: Common, 1 85¢. @ 2¢; Medium, 2¢ @ 2.10¢, and Refined, 2.10¢ @ 2.50¢ on dock.

Structural Iron .- A number of round ots have been placed during the current week, and the market is steady. We quote Angles, 2.35¢ @ 2.40¢; Tees, 2.70¢ @ 2.90¢, and Channels and Beams, 3.3¢ base on dock.

Plates.-Plates are still weak. We quote for round lots of Common or Tank, 2.35¢@ after its passage and payable on any Mon- 2.50¢; Refined, 2.50¢ @ 2.60¢; Shell, 2.7¢ @ 2.8¢; Flange, 3.7¢ @ 3.8¢; Extra Flange, 4.25¢ @ 4.50¢. For Steel Plates quotations are as follows: Tank, 2.75¢ @ 3¢; Ship, 3¢; Shell, 3.70¢ @ 3.25¢; Flange, 3.25¢ @ 3.65¢, and Fire-Box, 4.25¢ @ 4.50¢, on dock

Steel Rails .- In the East only small lots have been sold during the current week, and ome inquiries of the same character are coming up. In the West inquiries aggre gating 40,000 to 50,000 tons have been re ceived, although it is not quite sure that the largest single inquiry among them is not merely to arrive at some estimate of cost. We quote \$38 @ \$38.50 at Eastern mill.

Blooms and Birlets .- Early during the week under review a resale of 6000 tons of Blooms was made, Western being changed to Eastern delivery. Foreign Blooms are nominally \$29 @ \$29.50. Foreign Billets are entirely crowded out of the Pittsburgh maring mills.

Wire Rods .- The market is quiet, with ome inquiry for early delivery, but no business for later shipments. We quote \$41 @

Old Rails .- The market has been abso lutely featureless, with the majority of holders unwilling to meet the prices occasionally made by those who are pressing lots on the market. The only transaction of any magnitude reported is a sale of 300 tons of Bridge the New York Chamber of Commerce to Rails at \$21.50, delivered f.o.b. cars Jersey City, and the rumor of a sale of a similar lot at a shade under that price. Double Heads are offered here in part and for shipment at \$22 and Tees \$21.50

> Scrap.-No business of any consequence is reported. Yard Scrap may be quoted \$22 @ \$22.50 nominally, with some sellers asking \$23 @ \$23.50.

Rail Fastenings.-We quote Spikes 2 45¢ @ 2.50¢ here: Angle Fish Bars 2.15¢ and Nuts 3.10¢ @ 3.20¢ and Bolts and Hexagon Nuts 3.25¢@ 3.40¢.

Imports of Iron, Steel and Metals Into

New	YOFK.	
	To May 1. Gross tons.	Last week. Gross tons.
Iron Ore	7,875	295
Pig Iron		9.126
Spiegeleisen	28 547	2.488
Old Rails	65,629	3,984
Scrap Iron		
Scrap Steel	7.808	40
Blooms and Billets	24,857	3,182
Steel Fails	126	
Wire Rods	34,791	1.118
Iron Bars	3,528	47
Steel Bars	8 124	969
Beams	650 -	12
Steel Plates	2.185	18
Pig Tin	3,947	185
Tin Plates, boxes	512,392	76,313

#### Philadelphia.

Office of The Iron Age. 220 South Fourth St., PHILADELPHIA, May 10, 1887.

strengthened by improved railroad earnings.

Coal stocks were affected by rumors of an impending miners' strike. Saturday's bank directors let contracts for 213 coke ovens.

And Coke Company, closed a contract with them, on the 5th inst., for two others of the same time the Sloss impending miners' strike. Saturday's bank directors let contracts for 213 coke ovens. just as uncertain as they have been for a tracts, so that the position is in all respects

to think that as the market has shown so inside rate to the very best class of buyers. much resistance, it may be on the eve of a recovery, as there is almost sure to be an have been taking deliveries on old contracts, a shade less than \$22, but the majority are which are in many cases beginning to run out, and while that affects producers as well as consumers it will probably have the effect of settling values, which for some time have been very irregular. On the whole, the chances appear to be in favor of a more active market, but without special change in prices, unless something unforeseen occurs connection with the strike in the Coke regions and at other points. There is no greater urgency to sell than there was a few weeks ago (there are some anxious sellers, of course), but the limit in making concessions has been reached, as sellers appear to have named their bottom figures a week ago. Buyers have not taken hold very freely. however, and, in fact, show very little disposition in that direction, so that, as we said before, the position is practically unchanged. Small lots have been taken at \$20.50 @ \$21.50, at tide, for No. 1 Foundry, \$19.50 @ \$20 for No. 2, and \$18 @ \$18.50 for Gray Forge, with bids for the lower grade in lots of 1000 to 2000 tons each at about \$1.50 below the asking rates, which holders do not appear inclined to meet for the present at all events.

Foreign Iron .- There is some little in quiry for spe ial brands of Bessemer, but we cannot quote sales, as prices are some what beyond buyers ideas. Ordinary brands are available at \$20.50 @ \$20.75, c.i.f. duty paid, and 20 % Spiegel, at \$27.50 @ \$28, but there is nothing doing.

Blooms.-The market is extremely dull, and prices entirely nominal, as no sales have been reported for some time past. There is some inquiry for quotations, but nothing likely to lead to business. We quote about as follows: Rail Blooms, \$29 bid for spot, and \$29.50 @ \$30 asked for shipments; Nail Slabs, \$30 @ \$31; Sheet-Iron Billets, \$34 @ \$36; higher qualities for Boiler Plate, &c., \$38 @ \$42. American Blooms as follows: Charcoal Blooms, \$54 @ \$55; Runout Anthracite, \$47 @ \$48; Scrap Blooms, \$38 @ \$39 }? " bloom " ton.

Muck Bars .- Prices are steady, and at \$32 50 @ \$33, at mill, a fair amount of busiare favorable to the buyer.

Bar Iron .- There is some little improvea large business offering. Orders for small bulk of what has been taken, although there from 300 to 500 tons each, but we cannot hear of any of them being definitely closed. Skelp orders appear to have ceased entirely, so that it is difficult to keep the mills at work on the amount of stuff called for by the smaller class of consumers. Taking it as a whole, the feeling is rather despondent, although in some quarters there are indications of renewed activity. Prices are unchanged, nominally, 2.2¢ for best Refined Bars, but 2.1¢ is nearer to the market, and as low as 2¢ on large orders. Skelp is nominal at 2.15¢ for Grooved, and 2.35¢ for Sheared, but there is no inquiry at present.

Plate and Tank Iron.-There is no are as dull as they have been for months. Some of the mills are, of course, tolerably busy, but there are others that are extremely anxious for work, to secure which very low prices would be quoted. There is nothing in the outlook to indicate any immediate improvement, so that prices are somewhat irregular, but usually quoted as follows : Ordinary Plate, 2.3¢ @ 2.35¢; Tank, 2.4¢; Shell, 2.6¢ @ 2.7¢; Flange, 3.65 t; Fire-Box, 4.2¢ @ 4.5¢; Steel Plates, Tank, 2.8¢ @ 3¢; Shell, 3 25¢; Flange, 3.5¢; Fire-Box 4¢ @

Structural Iron.-This department of the Iron trade still maintains its activity, at \$19.50 cash, but \$19 cash would now be with prospects of an unusually promising The mills are all busy, and while no specially large contracts have been given out, there is enough coming in from week to week to prevent even temporary duliness, while the amount of business in sight imparts a feeling of great confidence in regard to the outcome of the summer business. @ 2.25¢. Steel Angle bars 2 25¢ and Bolts Prices are steady at about the following quotations: 2.4¢ @ 2.5¢ for Bridge Plate: 2.30¢ @ 2.35¢ for Angles; 2.8¢ @ 2.9¢ for Tees, and 3.3¢ for Beams and Channels.

Sheet Iron. -Some departments are kept pretty busy, but the general demand is rather disappointing. There is a good deal of inquiry, however, and large orders could be taken if makers would name specially low quotations, but they prefer meeting the demand as it comes, at about the following

Best Refined, Nos. 26, 27 and 28	8368
Best Refined, Nos. 18 to 25	3140
Common, 44¢ less than the above.	
Best Bloom Sheets, Nos. 26 to 28 41/9 @	D 434 €
Best Bloom Sheets, Nos. 22 to 25 4	D 4140
Best Bloom Sheets, Nos. 16 to 21 31/4 (	0 314€
Blue Annealed 2.8 @	83 6
Best Bloom, Galvanized, discount	60 %
Common discount	65 %

Steel Rails .- There is a good demand for Rails, and prices are very firmly main-Pig Iron.—There is not the slightest tained. Prospects are said to be favorable, change to report, everything being in about and orders from several new roads are the same condition as noted a week ago. likely to be on the market during the sum-Prices are neither higher nor lower, demand mer months. Meanwhile all the work that

good many weeks past. From the fact that favorable. The range of prices is \$30 @ things are no worse, some people are inclined \$40 at mill, the former quotation being an

Old Rails .- The market is as dull as ever. A few small lots have been taken at active demand before long. Consumers about \$22, f.o.b. cars, and one 500-ton lot at storing their Rails for \$23, or from that to \$24. The demand is very limited, however, and prospects at the moment not very encouraging.

Scrap Iron .- The demand is light, but small lots are taken at about the following quotations: Cargoes of No. 1 Scrap. \$20.50 \$21.50; small lots, tide water delivery, \$22.50; Selected do., \$24 @ \$24.50; No. 2 do., \$16 @ \$17: Turnings, \$15 @ \$16.50: Old Car-Wheels, \$17.50 @ \$18.50; Old Steel Rails, \$23 @ \$24; Cast Scrap, \$16 @ \$17. do. Borings, \$12 @ \$13; Old Fish Plates, \$25 bid, \$26 @ \$27 asked.

Wrought-Iron Pipe .- Demand is fair, and list prices are strictly adhered to. No change in discounts, which remain as last quoted-viz.: Lap-Welded Black, 50 %: Lap-Welded Galvanized, 321/2 %; Welded Black, 32 1/2 %: Butt-Welded Gal ranized, 221/2 %; Boiler Tubes, 421/2 %.

Nails-Have somewhat recovered, and the stoppage of many of the Eastern mills, during the month of May, will put the future on a better basis. In the meantime, \$2.35 from store is quoted with some degree of firmness, and it is doubtful if less than this would be accepted, unless the Nails were a poor, or comparatively unknown brand.

#### Pittsburgh.

Office of The Iron Age, 77 Fourth avenue, PITTSBURGH, PA., May 10, 1887.

The condition of the general Iron and Steel industry has not improved during the veek under review. There is a continued feeling of uncertainty, and business is dull in consequence. Values of all kinds of raw material are weak and drooping. Various causes are assigned for the reaction which has come so suddenly and unexpectedly, the most prominent of which is labor troubles. which within the past week or two have become quite common throughout the country. The great Coke strike still holds out. but the opinion appears to obtain that it will not be of long duration. It is estimated that the strike, directly as well as indirectly. ness can be done, providing the deliveries throws out of work some 12,000 to 13.000 men, 10,000 of whom, it is estimated, have families. The action of the coke-workers in nent in the demand, without anything like refusing to abide by the decision of the arbitration is severely criticised. The ots have been numerous, and comprise the strikers say that their case was not properly presented to the umpire, but, if so, it was are some orders from car builders for lots of their own tault. One effect of the strike will be to stiffen Pig Iron if it holds out any length of time, as a good many furnaces in that event will be obliged to blow out, and thereby decrease production.

Pig Iron.-There has been no improvement in the situation during the past week. Within the past couple of weeks Mill Irons have gone off fully \$2, and Bessemer considerably more. It is well to bear in mind, however, that the latter was advanced considerably after the advance in Mill Irons had been checked. The indications are that the market will continue in its present dull condition until it can be determined whether or not the Coke strike has come to stay. It improvement in this department, and things is difficult to give reliable quotations in the present unsettled and unsatisfactory condition of affairs, but we may quote as follows:

Gray Forge Neutral	\$19.00 @	\$20,00, 4	mos
All Ore, Mill	40,00 04	20,50, 4	0.0.
No. 1 Foundry	21.50 @	22.00, 4	
No. 2 Foundry	20.50 @	21.00, 4	0.8
No. 8 Foundry	19.00 @	19.50, 4	6.4
No. 1 Charcoal Foundry	25.00 @	26,00, 4	
Cold Blast Charcoal	28.00 @	30,00,4	0.6
Bessemer Iron	22.00 @	22.50, 4	6.6

The lowest sale of Bessemer Iron reported was at \$21.79 cash, two weeks ago; it can now be bought considerably below that price but there is no demand for it. Some of the brokers think the offer of \$21 cash would be accepted. No. 1 Mill from are still quoted accepted. Consumers are all holding off, and while furnacemen generally are making little or no effort to sell, some are compelled to sell.

Muck Bar.—The market, in sympathy with Pig Iron, continues dull and unsettled, and prices have further declined. While thus far there have been no sales reported below \$32.50 cash, there is reason to believe that an offer of \$32 cash would not be refused. Some well-informed brokers incline to the belief that there will be an increased demand within the next few weeks, as there usually is with the advent of warm weather.

Manufactured Iron .- Orders have fallen off, and while the mills are pretty generally in operation some of them are not working up to their full capacity. Prices are weaker, in sympathy with the raw material, and it is evident that buyers are holding back, so that in the event of lower prices they will be in position to take advantage of the same. There is not much doubt, however, but what trade will pick up again as soon as the market becomes more settled, as requirements will be large from now until the last of the year. We continue to quote prices upon a basis of 2¢ for Bars, 60 days, 2% off for cash. There is not the demand for Skelp Iron that was expected, but it is probable it will improve as the season becomes more advanced.

Nails.-There is no improvement in the Nail market, which has been exceedingly dull all this year. Nearly all the factories have are

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later on in the season, as stocks in the hands have to be replenished, and, besides, prices are down so low that there is not much risk in stocking up. The card remains unchanged at \$2.25, 60 days, 2 % off for cash, but we understand there are offers here deal to do with the depressed condition of the market, by causing the postponement or

Wrought Iron Pipe.-There is a very good demand for large Pipe, but the smaller siderable cutting. Discounts on Black Button Black Lap-Welded, 52 1/2 %; on Galvannet; 2-inch Line Pipe, 14¢; 8-inch Drive 21/2, \$21.50; No. 3, \$21. Pipe, \$1.40.

Old Rails-Continue exceedingly dull, although prices have not varied much; conexpectation that there will be a further decline. We continue to quote Foreign Tees at \$25 @ \$25.50, delivered in Pittsburgh.

Bessemer Billets, &c .- Everything in is so little doing that it is difficult to give reliable quotations. Billets may be quoted nominally at \$32 @ \$32.50. Nail Slabs are very dull; no sales reported for a considerable time, and there is no demand; quoted quoted at \$44 for American, with a very light demand; might be bought below the price quoted. Crop Ends quoted nominally at \$22 @ \$22.50, and Bloom Ends \$21.50 @ \$22.

Steel Rails .- There is not much new business, but the mills are all pretty well quantity of Iron in the aggregate. The sold ahead already; heavy sections may be fairly quoted at \$40, cash at mill. The Edgar require about 2000 tons of Beams and 2000 Thomson Works have been making some large shipments during the past week or It is said that 14 bids have so far been retwo, both by rail and river. The decline in ceived. Bridge orders and other work conthe price of Bessemer Iron has, of course, tinue very active, and the outlook for this weakened the market.

Railway Track Supplies .- No change in prices reported, but the feeling is weaker, in sympathy with raw material. Spikes remain unchanged at 23/¢, 30 days, delivered; Splice Bars, 2.20¢ @ 2.30¢; Track Bolts, 2.30¢ with Square, and 2.40¢ with Hexagon Nuts.

Old Material. - All kinds of old material continues dull, and prices are weak and lower. Dealers say there has been a decline of from \$2 to \$2.50 P ton on everything in this line as compared with the highest point. We quote, nominally, as follows: No. 1 Wrought Scrap, \$25 @ \$26 P net ton; Old Ca. Axles, \$31 Wrought Turnings, \$17 @ \$18; Cast Scrap, \$17.50 @ \$18.50, gross ton; Cast Borings, \$14, gross; Open Hearth Steel, \$23.50, gross; Crucible do., \$27.50 @ \$28, net. Nothing doing here in Old Wheels.

#### Chicago.

Office of The Iron Age, 36 and 38 Clark St., Cor. Lake St., Chicago, May 9, 1887.

The local situation shows very little improvement over the condition of affairs reported last week; indeed, in some respects the outlook is a little less satisfactory. The strike of the hod-carriers now threatens to involve the whole building trade, the federation of workingmen to which the hod-carriers belong having decided to order out all tained. Quotations are as follows: Ordipersons engaged in the building trade unless their demands for higher wages are complied with. This will, of course, affect the imme diate demand for Iron for building in this city. It is the opinion of prominent builders, however, that the operations in their line which are now postponed will have to be pushed with greater energy later in the have been closed since last Wednesday, on in round, large lots; but the difficulty of season, so that the present dullness in the branches of trade directly affected may simply cause greater activity a month or two hence.

Pig Iron.-The leading topic of conversation in Iron circles is the effect of the strike of the Coke makers in the Connelsville region of Pennsylvania. While a conservative view prevails, most of the furnace agents inclining to the belief that the strike will be of brief duration, owing to the great demand for Coke, at the same time some buyers have been influenced by the fear of a short supply of Coke Iron to place These contracts have heavy contracts. been the subject of negotiation for sometime, and would probably have been placed very shortly, but the Coke trouble has speedily tively refused to make 200 tons, notwithsettled the matter. Considerable quantities of Lake Superior Charcoal Iron have also been taken by the same parties, while some follows \$\mathbb{P}\$ ton of 2000 fb: Railroad Shop or the machinery has fully met the expectament, but is simply an incident of the market. Purchasing in carload lots is really Machinery Cast, \$15; Cast Borings, \$10; Company, of this city, are pushing their the order of the day, and continued dullness Machine Turnings, \$12; Axle Turnings, buildings as fast as possible, and when comagents, nothwithstanding inquiries that are in the market from large consumers who Axles, \$24. These prices are for strictly States. in the market from large consumers who Axles, \$24. These prices are for strictly States.

shut down, and there are comparatively few will be compelled in the course of the next machines running in Pittsburgh. However, month or so to place contracts for additional there will probably be an improved demand supplies. Stocks are reported very light in consumers' hands, and if it were not that of jobbers are getting down low and will many buyers expect prices to be lower they would replenish their stocks now. The only weakness reported in the local market is in the case of holders of speculative lots of Charcoal Pig Iron who still have small quantities left which they are anxious to dispose of, fearing from other points to sell at \$2.15. The that prices may drop so as to leave them no labor troubles have probably had a good profit. A few lots of this character have been picked up during the last few days at 50¢ to \$1 below the regular quotation. Furabandonment of contemplated improve- nace agents generally assert that they have not found it necessary to meet these prices, knowing that the quantity in second hands is very small, but on some brands prices sizes continue very dull. One firm have a have been marked a trifle lower. Quotations single contract for 100 miles of large Pipe; are as follows, for cash, f.o.b. Chicago indeed, the mills are all pretty well employed Lake Superior Charcoal, Nos. 1, 2 and 3, on the large sizes. While we repeat former \$22.50 @ \$23.50; Southern Cold Blast Charquotations, it is still intimated that there is con- | coal, \$27; Blackband Coke Softeners, \$24 @ \$24.50; Hanging Rock and Jackson County Welded Pipe, 35 %; on Galvanized do., 25 %; Soft, \$22.50; Straight Coke Foundry No. 1, \$22.50 @ \$23; No. 2, \$21 @ \$21.50; No. 3, ized do., 35 %; Casing, all sizes, 45 %; Boiler \$20 @ \$20.50; Coke Bessemer, run of fur-Tubes, 42 ½ %; 2-inch Tubing, 16¢ \$3 foot, nace, \$23; Southern Coke No. 2, \$22; No.

Bar Iron .- A great many inquiries were going the rounds of the market during the past week, and sales were effected of a consumers, however, are still holding off, in siderable quantity. Some of the inquiries were in the nature of feelers, and were evidently not intended to result in actual transactions. They had the effect, how ever, of making a number of dealers believe this line continues dull and weak, and there that some parties were cutting rates, because their bids were not accepted. Orders for Car Iron previously referred to have not yet been placed, but contracts are expected to be closed early this week. Common Bars are still quoted at 2¢ @ 2.15¢, in carload nominally at \$30.50 @ \$31. Consumers say lots, f.o.b. Chicago, according to specificathat if the price of Nails is considered Slabs tions, while Car-Iron orders are quoted at should not be over \$29 @ \$30. Steel Rods 2.10¢, flat All Muck Bar Iron is quoted at 2.20¢ @ 2.25¢. A fair trade is being done from store at 2.20¢ @ 2.30¢, according to the size of the orders and specifications.

> Structural Iron .- A number of orders are in the market which call for a very large Chicago Auditorium contract, which will tons of other Iron, has not yet been placed. branch of the Iron trade is fully as favorable as ever. Prices continue as follows Beams and Channels, 3.80¢, from store; Angles, 2.80¢ @ 3¢, from store, and 2.60¢ on cars, from mill; Tee's, 3.25¢, from store; Universal Mill Plates, 2.70¢, on cars, from

> Plates .- The demand for small lots is now running very light, and large orders are scarce. Tank Iron is quoted at 2.50¢ @ 2.60¢, in carload lots, from mill. Store prices are as follows: No. 16 Sheet, 3¢; Nos. 10 to 14, 2.90¢; Iron Tank, 2.80¢ Shell, 3.25¢; Flange, 4.25¢; Steel Shell, 3.50¢; Flange, 4.25¢; Fire-box, 4.75¢.

> Sheet Iron .- Inquiries for a considerable quantity of Black Sheets is reported, but sales have been light. A large business is expected shortly, but the buying season bas hardly begun. Common Black is quoted on a basis of 3 10¢ on cars from mill, and and 3.40¢ from store for No. 27. Galvanized Iron is moving very freely from the hands of manufacturers' agents. There is no change in quotations, although there are signs of weakness in some quarters. Manufacturers agents quote to jobbers 62 1/2% discount for Juniata, and 621/2 and 5 for Charcoal, while jobbers quote 50 and 15 for Juniata, and 60 for Charcoal.

Merchant Steel.-Less activity is reported in this branch than during the previous week and prices are not so well sus-

Rail department to suspend operations. It continue as before, \$43 and upward, according to circumstances

Old Rails and Wheels .- No transactions in Old Rails have transpired during the past week. Nominal quotations range from \$23.50 to \$24 50. Old Car Wheels are still quoted at \$22, with light transactions.

Scrap .- The local dealers report the market very quiet and prices weak. The largest portions. sale reported during the week was 100 tons of No. 1 Wrought, which the buyer posi-Pipes and Flues, \$14; Stove Plate, \$11;

selected stock. Mixed country Wrought is quoted at \$14, on cars Chicago.

Nails.-There is continued unsteadiness in price. Manufacturers' agents are busily endeavoring to effect sales, but find it necesstill \$2.50 for Steel and \$2.40 for Iron, with number of inquiries for Ore of all grades, 10¢ off in carload lots, but the carload price and several substantial sales are reported. is now the usual price asked for small lots, A round block of Gogebic Ore, said to conand further concessions are made whenever it is found necessary to hold trade. \$5.90. Both mine owners and furnacemen The jobbers report a very good demand for Nails, with strong indication fleet to transport the 4,500,000 tons of Ore, of a very large demand within the next 30 days, dependent, of course, upon the duration of the local building troubles. A number of considerations are now urged to favorably or unfavorably affect the price of Nails, with freight this year, which, but for the high about equal chances on both sides. A better demand for Wire Nails is again reported, but jobbers expect to buy at lower prices than most manufacturers are at this time willing to concede. Manufacturers quote \$3.25 to jobbers, while jobbers ask about \$3.40 base for small lots.

Barb Wire .- The demand keeps up very well and jobbers' prices are uniformly steady. Quotations are 3.50¢ for Painted and 4.25¢ for Galvanized in small lots, which now constitute the bulk of the trade. Orders for carload lots are only occasionally received.

Hardware.-Manufacturers' agents re port business very good in most lines and prices steady on almost everything, the principal exception being Bolts and Nuts. Some of the manufacturers of these articles have been seeking to relieve a temporary dullness by reducing quotations, which other members of the trade say was not necessary. This does not affect Carriage Bolts, the prices of which are sustained by a combination. Jobbers report the condition of general trade excellent, the demand running along steadily on seasonable goods with a very tair business doing in all lines. No special change is reported in prices.

Lead.-While very little was done during the early part of the week, the condition improved later on, and the total sales of Pig footed up about 500 tons, at 4.12 1/2 ¢. At the close of the week 4.15¢ was asked, and the market closed with an appearance of to heavy purchasers. decided strength, very little being offered at the higher rate.

The M. C. Bullock Mfg. Company have removed their office from 156 and 158 Lake street, Chicago, to rooms 500 and 510 in the Phoenix Building, on La Salle street, opposite the Grand Pacific Hotel.

Mr. George C. Bailey, Western manager for the John A. Roebling's Sons Company of Trenton, N. J., has purchased for his company the four-story building numbered 171 and 173 Lake street, Chicago. The building will be altered and specially adapted to the needs of the new owners, who will move into it on the 1st of June from their present location at 215 and 217 Lake street

Mr. J. S. Brewer, representing a number of Eastern Iron and Steel establishments has removed from 156 and 158 Lake street to 146 Lake street, Chicago.

#### Chattanooga.

Office of The Iron Age, Carter and Ninth Sts., ECHATTANOOGA, TENN., May 9, 1887.

A review of the general business through the South indicates a continuation of the activity that has prevailed for the past few weeks.

Pig Iron-Is still in an unsettled condinary Tool Steel, 8¢; Specials, 13¢ @ 20¢; tion. The large time contracts which most Spring, 3¢ @ 4¢; Sheet, 7¢ @ 11¢; Besse- of the furnaces are working under still keep mer and Open Hearth machinery, 3¢ @ their yards clear of stock, and a few producers are pursuing a policy in making con-Steel Rails.-A few inquiries were on tracts for future deliveries that will probathe market during the past week, but no sales are reported. The Union Steel Works

There is now quite an active inquiry for Pig account of a strike by a few punchers, chip- naming figures, delivered, obstructs the clospers and filers, which compelled the whole ing of many sales. Sales, however, during the past week foot up about 1500 tons, much is expected that the difficulty will be ad- of which goes at a concession of 50¢ to justed very shortly, when the works will 75¢ \$\frac{1}{2}\$ ton. Judging from the inquiries resume with renewed energy. Quotations that are being received, were it not for the obstacles that exist on the question of freights, every pound of Iron that would be made in the South during the present year could be contracted for on a basis of present prices within the next three months. The Southern foundries are taking their full quota of metal, which indicates that their business is still maintaining full pro-

Miscellaneous .- The event of the past week is the commencement of the Roan Works in the manufacture of Steel Rails. standing the very favorable terms on which It will probably take a few days for all the good sales of Southern Carwheel Iron have No. 1 Forge, \$21 @ \$22; Railroad Track, \$19 tions of the management. During the presbeen made. This does not indicate a @ \$20; Mill or No. 1 Wrought, \$17; Light ent month their capacity will probably be general resumption of the buying move- or No. 2 Wrought, \$10; Boiler Plates, \$16; worked up to about 150 to 200 tons of 56 and 60 T. The Blount Stave and Machinery Company, of this city, are pushing their for sometime is still expected by furnace \$14; Coil Steel, \$16; Leaf Steel, \$17; pleted will have the largest capacity for

#### Cleveland.

CLEVELAND, May 9, 1887.

Iron Ore .- The first cargo of new Ore that has come down the lake this season sary to make quotations very low to tempt arrived at Cleveland on Thursday. During jobbers to buy. The nominal rate is still the past four days over 26,000 tons have been Iron, and a firm tone has continued to pre-\$2.15 at factory for Steel, but the factory received. The docks had been well cleared rate has in some cases been made the rate at up, and the Ore is being sent forward to the Chicago, while sales of small quantities have furnaces at a lively rate. The market is in Charcoal Bar Iron, 3¢ at 10¢; Sheet Iron, been made at concessions from even this low a more satisfactory condition than for rate. The regular quotation by jobbers is several weeks. There has been a large Iron, Charcoal, Nos. 15 to 25, 34 6 @ 44 6 tain 16,000 tons, sold during the week for fleet to transport the 4,500,000 tons of Ore, that the best informed dealers estimate as the output of the Lake Superior district. Dealers put forward the idea that the lake vessels will be given thousands of tons of freights, would be carried by rail. This will give the ves-els profitable employment, and they can make their own figures. It is assumed from this that the mine owners will find themselves unable to fill their contracts. At present, however, Ore is coming down from Escanaba at the rate of eight or ten cargoes a day. Quotations continue at \$6.75 @ \$7.25 for No. 1 Specular and Magnetic Bessemers, and \$5.75 @ \$6 25 for non-Bessemers. Bessemer Hematites have sold during the week for \$5.75, and non-Bessemers for \$5.25. The market promises to be animated for several weeks

Pig Iron.-The market is weaker than at any time for six weeks. A few small lots of Iron have been sold, but only in 50ton bunches. Is is very clear that buyers are waiting for the market to break, but it is also true that only a small amount of Iron is being offered for sale by the furnaces. Lake Superior Charcoal at \$24.50 @ \$25.50 four months, came the nearest to holding their own of any brands of Iron in the mar ket. No. I Foundry, all Lake ores, in quoted at \$21.75 @ \$22.75, and No. 1 Gray Short, at \$20.75 @ \$21.25.

Scrap .- A small lot of Old Rails sold during the week for \$24.25. Old Wheels are quoted at \$21.50, and No. 1 Wrought at

Manufactured Iron.-The market is light, with Bar Iron quoted at \$2.15, shaded

#### Cincinnati.

CINCINNATI, May 9, 1887. Pig Iron.-The local market for Pig

Iron has continued dull, and a weak tone has prevailed, and yet this statement must be modified to be accurate. The orders re ceived have been for moderate amounts, and. compared with a month or so since, moderate in number. The recent decline is said to have originated with Northern furnaces, more especially with Ohio furnaces, but the fact that Southern stacks have pressed "off" grades, made unexpectedly or not, upon the market will as much account for the decline as the policy of the Northern furnaces adopted to sell their product under adverse circumstances, but it is now claimed that even Southern producers are more anxious to book orders for summer and fall delivery at prices which would have been refused several weeks since. On the other hand. the information is given that leading furnaces are further behind in filling orders for standard grades than ever before in their "The largest Coke Iron Company history. in the South is more than two months behind on running contracts, while the next largest is still further in arrears, and is unable to take orders for standard grades before August." Again it is cited that the leading Charcoal furnaces tributary to this market have more Iron sold ahead than there sooner than we ever knew in the his they can make in the next three months on an average." Some Mottled Iron has been have entered into the contest than business sold through local houses in the Northwest sold through local houses in the Northwest expensive factor. It of at lower prices, and it is stated that is that time to subscribe "rather than when No. 2 Southern Mill Iron is obtainable Nails were \$2.60 to \$2.70, and we should not at \$18 cash here, although 50¢ } ton be surprised to see the present low prices more is generally asked. Foundry Iron tempt speculation.

Wire is in fair request, though the season continues relatively stronger than Mill, but even this grade is said to be obtainable 50¢ per ton lower than two weeks ago; no actual transactions, however, are quoted upon which to base an opinion. The burning out of the coke ovens and the strike among the handlers in the Connellsville district is also cited as a feature in the situation as favoring a firmer market, if not higher prices, as production will be curtailed. However, no marked increase in the demand is anticipated immediately. The

Charcoal Foundry.

Hanging Rock, No. 1. \$23.50 @ \$25.00
Hanging Rock, No. 2 \$2.00 @ 24.00
Southern No. 1 \$21.50 @ 22.50
Southern No. 2 \$30.00 @ 21.50
Coal and Coke Foundry.

Ohio Soft Stonecoal, No. 1. \$20.50 @ 21.00
Ohio Soft Stonecoal, No. 2 \$20.00 @ 20.50
Southern Coke, No. 1 \$20.00 @ 20.50
Southern Coke, No. 1 \$20.00 @ 20.50
Southern Coke, No. 2 \$21.00 @ 20.50
Southern Coke, No. 3 \$20.00 @ 21.00
Ohio and West Pennsylvania Coke, No. 1. \$20.00 @ 22.00
Ohio and West Pennsylvania Coke, No. 2 \$20.00 @ 23.00
Ohio and West Pennsylvania Coke, No. 2 \$20.00 @ 23.00
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Ohio and West Pennsylvania Coke, No. 2 \$20.00 @ 20.00
Ohio and West Pennsylv No. 1. 22,00 @ 23,00
Ohio and West Pennsylvania Coke,
No. 2. 20.50 @ 21.50

#### Car-Wheel and Malleable Irons, Southern Car-Wheel Hanging Rock, Cold Blast Hanging Rock, Warm Blas Lake Superior Malleable 26,00 @ 28,00 27,00 @ 28,00 24,00 @ 25,00 26,00 @ 27,00

Manufactured Iron.-There has been a goed demand for all kinds of Structural vail, notwithstanding the weakness noted in Pig. We quote: Bar Iron, 2¢ (a 2.10¢; Boiled, Nos. 10 to 27, 234¢ @ 314¢; Sheet

Nails .- The market has been well supplied and easy, with rumors of some cutting of prices 5¢ @ 10¢, but the quotations, which are authoritative, are \$2.25 } keg, for 10d. to 6od. Iron, and other sizes at proportionate rate. Steel sell at \$2.35 7 keg.

#### Louisville.

LOUISVILLE, KY., May 10 1887.

Pig Iron.-The market among Stove nen is quiet, owing to the strike going on In rolling-mill circles there is a constant consumption of Iron going on, which will tend to develop some very strong buying, as there are very small stocks carried by parties in this vicinity. There has been very little change in the market, which holds its own. Some small lots owned by speculators have been shaded, but there is very little effort on the part of furnaces to sell at less prices than we quoted last week. Scrap Iron, however, is very weak, and can be bought at buyer's prices. Old Rails that have been selling at \$25 are now being of fered at \$23. We quote for cash as below 

Hanging Rock Coke, No. 1 Foun-		
dry	20.50 @	21.00
Southern Charcoal, No. 1 Foundry	22.00 @4	22.50
Silver Gray, different grades	19.00 @	20.00
Southern Coke, No. 1 Mill, Neutral	19.00 @	19.50
" No. 2 " "	19.00 @s	19.56
" No. 1 " Cold Short	19,00 @	19.50
" Charcoai. No. 1 Mill	20.00 @	20,50
White and Mottled, different grades	17.00 @4	18.00
Southern Car-Wheel, standard	-	
brands	26.00 @	27.00
Southern Car-Wheel, other brands	24.00 60.	25.00
Hanging Rock, Cold Blast	26,00 (6	27.00
Hanging Rock Warm Black	99 00 6	ab a visit

W. B. BELKNAP & Co., Louisville, report as follows, under date of May 9, 1887: While the market is somewhat bearish in its tendencies, it does not seem to us to justify the extreme views taken by some. The most atrabilious pessimist cannot fail to admit that tremendous consumption is going on, and a very healthy one, in the construction of railroads in every State, public buildings and private edifices in every city. The ag-ricultural districts are active, and the statistician of the Courier-Journal here predicts a larger acreage of cotton and corn for the South than was ever known before. Besides prices now are not high absolutely. The advances, after all, except on some few articles which have been affected by combina-tion, are in the main insignificant over the extreme low figures which prevailed during the recent years of depression. Nails have already receded to what would seem their limit, and many lines of ordinary castings, too, show but little advance. There cannot be much of a retrograde movement, for there have been very few fictitious advances to base it on. The fact, however, that we overtake so speedily the consumptive capacity of our country when there is anything to encourage manufacture at all is simply evi-dence of our immense resources.

Bar Iron—Is firm and selling freely. The mills seem well supplied with orders, and there is no cutting of prices up to the pres-ent time, as far as we can learn, nor is there likely to be if the Coke strike con-

Hoops and Bands-Are somewhat easier.

while Sheets are steady, with a fair con-sumptive demand for the latter.

Steel.—There is a great deal of Cast Steel selling to machine shops and construction companies. We cannot look for much movement in machinery and agricultural steels until contracts for next season begin to be placed in June and July.

Nails.—The precipitancy of the Nail price

loward bottom has result

must be drawing to a close.

#### Detroit.

CHARLES HIMROD & Co., dealers in Pig Iron, Detroit, Mich., report, under date of May 9, 1887, as follows: Although the mar-ket still continues dull and very little call is made for Pig Iron, there have been more orders placed for Lake Superior Charcoal during the past week than for some time heretofore, at firm prices for good brands. prices current at the close are a little lower for some grades, and are approximately for which rather confirms the Iron maker in his

Lake Superior Charcoal, all num-			
bers	\$23.50	22	\$91.50
Lake Superior Coke, All Ore	23,50	600	24.50
Lake Superior Coke, Cinder Mixed.	21.00	(CL)	22,00
Standard Ohio Blackbands		(cli	24,50
Southern No. 2	21.00	(42)	22,00
Southern Silvery	21.00	60	22.00
Jackson County, Ohio Silvery	20,50	(2)	22,50
American Old Iron Rails			26,00
Old Wheels	90 (6)	130	-31 /3/3

## CURRENT HARDWARE PRICES,

that the manufacturers are selling at the prices of by the manufacturers, perhaps by the jobbers, at t	he
Ammunition.	
Cans, Fercussion, ₹ 1000— Hicks & Goldmark's F. L. Waterproof, 1-10's	
E. B. Ground Edge, 1-10's. 70's Double Waterproof, 1-10's. \$1.40	10
Orns, Fercussion, # 1000-   Hicks & Goidmark's   5.06     F. L. Waterproof, 1-10's   5.06     E. B. Trimmed Edge, 1-10's   6.56     E. B. Ground Edge, Central Fire, 1-10's, 706     Double Waterproof, 1-10's   \$1.40     Musket Waterproof, 1-10's   5.00   2.00     G. D	80
F. C. Trimmed	%
Bouble Waterproof, In 1-10'8	5¢ 6¢
C trtridges— dis 60&2	N. W.
C irtridges— RIm Fire Cartridges	* * *
Riank Cartridges, except 22 and 32 cal., an additional 10 4 over above discounts.  Riank Cartridges, 22 cal	M.
B. B. Caps, Conical Ball, Swaged. \$1.75, dis 2	* * *
Bergan Primers, all sizes, and B. L. Caps (for Sturrevant Shells) 90¢, dis 2  All other Primers, all sizes \$1.10, dis 2	W. W.
Shells— Paper Shot Shells, 1st & 2d or S. G. qualdis 15&2  Paper Shot Shells, 1st & 2d or S. G. qualdis 15&2	W. W.
Shell— Paper Shot Shells, Ist & 2d or S. G. qualdis 15&2 Selbold's Combination Shot Shellsdis 15&2 Paper Shot Shells, Club, Rival, Climaxdis 15&2 Paper Shot Shells, Star Branddis 25&2 Brass Shot Shells, Ist qualitydis 60&2 Wada—	***
#7ads— C. M. C. & W. R. A.—B. E., 11 up\$2.00 U. M. C. & W. R. A.—B. E., 9&10 2.30 U. M. C. & W. R. A.—B. E., 7&8 2.60 U. M. C. & W. R. A.—B. E., 7&8 2.60 U. M. C. & W. R. A.—P. E., 9&10 4.00 U. M. C. & W. R. A.—P. E., 7&8. 400 Eley's B. E., 11 up \$2.10 Eley's P. Eley's P. Eley's P. Eley's P. Eley's P. Eley's P	K
U. M. C. & W. R. A.—P. E., 9&10	75
Eley's P. E. 11 (20	80
Anvils.—Eagle Anvils * b 10s, dis 20 @ 20a5 Wright's. Armitage a Mouse Hole	
Freaton Wikinson's Week's La Riley Carr. Patent Solid 11@11%	6
Antil Vise and Drill— \$18.00, dis 20 Millers Falls Co	××
Anett Vise and Druc- millers Falls Co	Ø
A wgers and Bits.  Donglass Mfs. CO	
French, Swift & Co. (F. H. Beecher) Connection Valley Mfg. Co.	
Cook's, New Haven Copper Codis 50&10@50&10&5	5
Ives Circular Lip	* *
7. E. Jennings & Co., Auger Bits, in fancy boxes, set, 324 quarters, No 5, \$5; No 36, \$3	× %
Anssell Jennings' Augers and Bits	**
mitation Jennings Bitainew list.	*
Hollow Augers	*
Bonnev's Adjustable # dos. \$45	* * *
Universal Expansive, each \$4.50	
Clark's smail, \$18; large, \$26dis 35 @ 35&5; [vee' No. 4, per dos., \$60	5 5 5
### ##################################	
######################################	5
Double Cut, Shevardson's dis 45 @ 50; Double Cut, Ct. Valley Mfg. Co. dis 30&10; dis 10 dis 10;	
Double Cut. Douglass'	4
### Stock Ording	2 2 2
Gracuse for metal   dis 50&10 9	200
Williams or Holt's, for wood	
Ship Augers and Bills—	
A wil Haits.	
Awl Haits.  tewing, Brass Ferrule. \$3.50 \(\frac{3}{2}\) gross—dis 45&10 \(\frac{3}{2}\) Patent Sewing, Short. \$1.00 \(\frac{3}{2}\) dox—dis 40&10 \(\frac{3}{2}\) Patent Sewing, Long. \$11.00 \(\frac{3}{2}\) dox—net Patent Sewing, Long. \$10.00 \(\frac{3}{2}\) gross—dis 45&10 \(\frac{3}{2}\) Patent Peg. Leather.Top. \$12.00 \(\frac{3}{2}\) gross—dis 45&10 \(\frac{3}{2}\)	
A wis, Brad Sets. &C.  4 wis, Sewing, Common.	
\text{twis. Shouldered Feg \$\pi\$ gross 63&\text{-618} 40\alpha 60\alpha 10 \text{ \$\text{twis. Patent Feg }\pi\$ gross 63&\text{-618} 40\alpha 60\alpha 10 \text{ \$\text{twis. Shouldered Brad }\pi 2.70 \$\pi\$ gross-618 35 \text{ \$\text{twis. Handled Brad }\pi 2.70 \$\pi\$ gross-618 35 \text{ \$\text{4.5}\$} \text{ \$\text{twis. Handled Brad }\pi 2.70 \$\pi\$ gross-618 35 \text{ \$\text{4.5}\$} \	
twis. Handled Scratch\$7.50 ♥ gross—dis 35&10 \$ twis. Socket Scratch\$1.50 ♥ doz—dis 25 @ 30 \$	
A Wil and Tool . No. 20, Wdox \$10 dis 50&10 stray's Adt. Tool hids. Nos. 1, \$12; 2, \$18.; 3. \$12; 4. \$3.	1
Miller's Falls Adj. Tool Hdls., Nos. 1, \$12; 2, \$18. dis 25 & Henry's Combination Haft	
Miller's Falls Adj. Tool Hdls., Nos. 1, \$12; 2, \$18.04 5 5;  ### Falls Adj. Tool Hdls., Nos. 1, \$12; 2, \$18.04 5 5;  #### Falls Adj. Tool Hdls., Nos. 1, \$12, 50dis 70&10&5 \$  ### ### ### ### #### ##############	-
A xee. and Special Brands—  First quality * doz \$8.75 Others doz, \$5.75 @ \$6 A xie Greane.	-
Others  A gie Gresse.  Faser's, in bulk	1
ower grades, special brands	-
Ower grades, special mass	
stional Wrought Steel Tubular Self-Oiling: Standard Farm (1 to 5) and Special Farm (A1 to A5) Less than 10 sets	1
*stional Wrought Steel Tubular Self-Oiling:       Standard Farm (1 to 5) and Special Farm (A1 to A5)       Less than 10 sets	
Over 10 sets	
Pag Holders.       doz \$18       dis 60 \$         Sprengle's Pat., № doz \$18       dis 50 \$         Balances.       dis 50 \$       eumon 24 \$         common 24 \$\theta\$       \$\phi\$ doz, \$1.50 \$       dis 50 \$         natillor \$Spring Balances       dis 50 \$       dis 50 \$         hatillor's Circular Spring Balances       dis 60 \$	
Bells.	
dis 75&10 g   dis 75&10 g   Eight Brass   dis 75&10 g   Eight Brass   dis 65&10 e 70 g     2xtra Heavy   dis 65&10 e 70 g     4xtra Heavy   dis 75&10 e 70 g     5xtra Heavy   dis 75&10 e 70 g     5xtra Heavy   dis 75&10 e 70 g     5xtra Heavy   dis 75&10 e 75	
Ant-	
long. Abbe'sdis 25&10 @ 35 &	
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	1, 1887.	
0 10	e Current Hardware Prices which prevail in the mark ices, and manufacturers should not be held responsible of figures than the manufacturers name, it is not state ofted, but simply that the goods are being sold, perha- ingures named.	I
	Belting. Rubber.   Common Standard	100000000000000000000000000000000000000
20 20 20	Morrill's w dog \$9-dis 50	1
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an an	Sarbed, & in. and larger by the Sarbed and sarbed by the Blocks.  Blocks.  Ordinary Tackle Blocks, list Ap.17, 85.dis 50&10 @ 60	9
ALDER CARRES	Door and Shutter— Cast Iron Barrel, Square, &c	
	Com. list June 10. '84	4 4 4 4
	Tire— Common. list Feb. 28, 1883. dis 65&10 P. C. B. & N. Co., Empire, list Feb. 28, 1883.dis 65&10 P. C. B. & N. Co., Philadel, list Oct. 84. dis 82&4 P. C. B. & N. Co., Newstone, Phil. list Oct. 84. dis 82&4 P. C. B. & N. Co., Norway, Phil. list Oct. 84. dis 7&40 Am. 8. Co., Norway, Phil. list Oct. 16, 84. dis 7&40 Am. 8. Co., Eagle, Phil. list Oct. 16, 84. dis 7&40 Am. 8. Co., Eagle, Phil. list Oct. 16, 84. dis 7&40 Am. 8. Co., Eagle, Phil. list Oct. 16, 84. dis 82&4 Am. 8. Co., Eagle, Phil. list Oct. 16, 84. dis 82&4 Am. 8. Co., Eagle, Phil. list Oct. 16, 84. dis 85&10 R. B. & W., Philadel, list Oct. 16, 1884. dis 82&8 R. & E. Mfg. Co. dis 65&10 Stove and Plote—dis 65&10 dis 65	祖司行士司司司司司司司司司司司司司司司司司司司司司司司司司司司司司司司司司司司
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	Bolt Ends.	* 位 質質を
	Humason, Beckley & Co.'s, Nos 1 and 2— dis 60&10 @ 60&10&5 Humason, Beckley & Co.'s other Nos. dis 70 @ 70&10	S S
	Sarkent & CO. *	化螺 化螺形式
The state of the s	Peck. 800 & W. Co.   137 and 118, dis 00x10	NAME OF STREET
Contraction of the last of the	Ives   Barber Ratchet	THE PARTY OF THE P
000000000000000000000000000000000000000	Amidon's Eclipse Ratchet dis 50x10x  Amidon's Globe Jawed dis 10x10x10x  Amidon's Corner Brace dis 40x 40x10x  Amidon's Universal 8 th, \$1.00 : 10 in, \$2.10  Amidon's Ruffalo Ball \$1 10 a \$1 10  P. S. & W dis 50x10x  Brackets.	
	Shelf, plain, Sargent's list	
	HOUGHELSE TOW HEE	
	Butcher's Cleavers.  Humason & Beckley Mfg. Co	
	Butts   Bruss   Butts   Bruss   Bruss   Bruss   Bruss   Bruss   Bruss   Bruss   Bruss   Gast Brass   Gast B	
	Cast Iron-	
	Loose Pin, Acorns, Japanned Loose Pin, Acorns, Jap, Pitd, Tips	
	### Wrought (steel) -	
1	Parker         dis 75.82 s           Palmer         dis 50.85 bit 0 s           Beymour         dis 70.82 s           Luil & Porter         dis 75.810 ss s           Nicholson         dis 45.810 s	The same of the sa
	Huffer	
	Shepard's Niagara Gravity, Nos. 1, 3 and 5.  Shepard's Buffalo Gravity, Nos. 1, 3 and 5.  Shepard's Champion Gravity, No. 75 dis 75&10&5 5  Shepard's Champion Gravity, No. 75 dis 75&10&5 5  Shepard's Steamboat Gravity, No. 10. dis 75&10&5 5  Shepard's Steamboat Gravity, No. 10. dis 75&10&5 5  Shepard's Steamboat Gravity, No. 10. dis 75&10&5 5  Shepard's O. S. Luli & Porter. dis 75&10 2  Shepard's O. S. Luli & Porter. dis 70&10 2  Shepard's "Queen City" Reversible. dis 70&10 2  Clark's Luli & Porter, Nos. 0, 1, 15, 2, 25, 3  North's Automatic Blind Fixtures, No. 2, for Wood, \$10.50: No. 3, for Brick, \$15.50 dis 25&2 5	
	Wood, \$10.50; No. 3, for Brick, \$13.50 dis 25&24 Calipers.—See Compasses.	
S N. N. N. O.	ressenger's Comes	
Ä	prague, No. 1. 32; 2, 3. 31, 52,50dis 50&10&10 g	

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CURRENT HARDWARE PRICES,	Carpet Stretchers.         # dos \$5.26           Cast Steel, Poltshed         # dos \$5.26           Cast Iron, Steel Points         # dos \$1.76           Socket         # dos \$1.76           Rullard's         dis 25 @ 25&10 \$           Carpet Sweepers         # dos \$17.00		Peck's
Note.—The quotations given below represent the Current Hardware Prices which prevail 'n the market at large. They are not given as manufacturers' prices, and manufacturers should not be held responsible for them. In cases where goods are quoted at lower figure, than the manufacturers name, it is not stated that the manufacturers are selling at the prices quoted, but simply that the goods are being sold, perhaps by the manufacturers, perhaps by the jobbers, at the figures named.	Jewel	Fron, Hst Nov. 11, 1885	Hay Knives. Lighthing. P doz 81.8, dis 25 @ - Electric. P doz 81.8, dis 25 @ - Electric. P doz 81.8 0 @ 810, Gem P doz 81.7 @ 812, Wadsworth's dis 40.81 Carter's Needle P doz 81.2 @ 813. Wrought from Hinges—
A mmunition.    Ammunition	Parlor Queen	Raucers	Strap and T   die 70&   die
S. B.	Cartridges.—See Ammunition.   Casters	Metallic Key, Leather Lined.         dis 55&10 @ 60&10 \$           Cok Lined.         dis 70 @ 70&10 \$           Burnside's Red Cedar.         dis 50 %           Burnside's Red Cedar, bbl. lots.         dis 50 %           J. Sommer's Best Block Tin Key         dis 40 %           dis 40 %         dis 40 %	Rolled Plate
Elev's E. H	Marth's Patent (Phoenix). dis 45&10 @ 50 % Passon's Anti friction. dis 45&10 @ 10 & 50 % "Giant" Truck Casters dis 10 @ 10 & 5 %	J. Sommer's Diamond Lock dis 40 % Self-Measuring, Enterprise. \$\pi\$ dos \$36.00\to \text{dis }20\text{80} \text{ 20\text{80}}\$\$ Self-Measuring, Lane's. \$\pi\$ dos \$36.00\to \text{dis }20\text{80} \text{ 20\text{ 20}}\$\$ Self-Measuring, Victor. \$\pi\$ dos \$36.00\text{ -dis }20\text{ 20\text{ 20}} \text{ 20\text{ 20}}\$\$ Self-Measuring, Victor. \$\pi\$ dos \$36.00\text{ -dis }20\text{ 20\text{ 20}}\$\$ Felice Plates. \$\pi\$ dos \$36\text{ 20\text{ 20}}\$\$ Fifth Wheels.\text{ -Derby and Cincinnati .dis }45\text{ 20\text{ 20}}\$\$ \$\pi\$ Domestic-	Spring Hinges-    Geer's Spring and Blank Butts
tional 10 \$ over above discounts.  Rlank Cartridges, 22 cal. \$1.50, dis 2 \$ Rlank Cartridges, 32 cal. \$3. dis 2 \$ Primed Shel's and Bullets dis 25&22 \$ B. B. Caps, Round Ball. \$1.60, dis 2 \$ B. B. Caps, Conical Ball, Swaged \$1.75, dis 2 \$ Blind Staples.  \$1.50, dis 2 \$ Blind Staples.  \$2.50 Blind Staples.  \$3.60 Blind Staples.  \$3.60 Blind Staples.  \$4.60 Blind Staples.  \$4.60 Blind Staples.	LOG Fifth Strotages and other rancy Chains, 1187	Imported—  J. & Riley Carr List, April 1, 1883, dis 15 %  J. & Riley Carr Horse Rasps	N. E. Reversible # doz \$7.00, dis 55 N. E. Reversible # doz \$5.20, dis 56 & 10 Clark's, Nos, 1 2 3 dis 60&10 @ 60&10&5 N. V. State
Stuttevant Shells	American Coll 3-16 kg 5-16 kg 7-16 kg 34 In cask lots, 9 6.35 5.15 4.55 4.3 4.2 3.9 3.8 Less than cask lots, add 466366 kg kg b. b. dts 55&5@60 9	Stubs Stubs Ist, dis 25 & 30 % Turton's Turton's Het dis, 20 & 25 % Greaves' Horse Rasps American list, dis, 60 4	Common Sense.
Paper Shot Shells, Star Brand. dis 55.8   Brass Shot Shells, Ista quality. dis 65.2   Brass Shot Shells, Club. Rival & Climax. dis 65.2    ### Wrought Barrel. dis 70.6 70.8   ### Wrought Square. dis 70.6 70.8   ### Wrishutter. Brass Knob. Stanley's list. dis 60.8   ### Wrishutter. Brass Knob. Stanley's dis 60.8   ### Wrought Sunk Flush Sarrent's list. dis 55.8    ### Wrought Sunk Flush Sarrent's list. dis 55.8    ### Wrought Sunk Flush Sarrent's list. dis 55.8    ### Wrought Sunk Flush Sarrent's list. dis 55.8    ### Wrought Sunk Flush Sarrent's list. dis 55.8    ### Wrought Su	White₩ gro 55¢	Filting Machines.  ROX. 45-inch Rolls.  \$5.25 each { dis 35 \$ Rox 45-inch Rolls.  \$5.00 each { dis 35 \$ Rox 6-inch Rolls.  \$5.00 each { dis 35 \$ Rox 6-inch Roll.  \$2.15, dis 35 \$ Rox 6-inch Roll.  \$2.85, dis 35 \$ Row 16-inch Roll.  \$3.00 each, dis 35 \$ Row 16-inch Roll.  \$3.00 each, dis 35 \$ Row 16-inch Roll.  \$4.00 each, dis 35 \$ Row 16-inch Roll.  \$5.00 each R	
\$2.80   Phile pettern list Oat 7 194 dis 75.8 100 75.8 100 5	Chaik Lines.—See Lines. Chisels.	Crown Hand Fluter, Nos. 1 #15; 2, \$12,50; 3, \$10,018:30 \$ Shepard Hand Fluter, No. 85. \$4 doz \$15,30, dis 40; \$ Shepard Hand Fluter, No. 110 \$4 doz \$11, dis 40 \$6 hepard Hand Fluter, No. 95. \$4 doz \$8, dis 40 \$6 hepard Hand Fluter, No. 95. \$4 doz \$8, dis 40 \$6 clark's Hand Fluter \$10,00 \$6, \$4 doz \$15,00, dis 35 \$6 Combined Fluter and Sad Iron. \$4 doz \$15,00, dis 35 \$6 Combined Fluter and Sad Iron. \$4 doz \$10,00 dis 15 \$6 Eluting Scissors. \$4 doz \$10,00 dis 15 \$6 Fluting Scissors. \$4 doz \$1.75 Forks. \$4 doz \$1.75 Forks. \$4 doz \$1.75 Forks. \$4 doz \$1.75	Maynard   Mayn
Anvils.—Eagle Anvils \$\\$ b 104, \ \ \text{dis 2048} \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Socket Framing and Firmer-    Witherby and Douglas   P. S. & W   dis 75 @ 75 & 5     New Haven and Middlesex   dis 30 \$     Merrill   dis 60&10&10 \$     L. & I. J. White   dis 30 \$     Socked Firmers   dis 50 & 10&5 \$     Tanged Firmers   dis 50 & 10&5 \$     Tanged Firmers, Butcher's   \$4.75 @ \$5.00 Tanged Firmers, Spear & Jackson's   \$5.00 to \$     Tanged Firmers, Ruck Bros   dis 30 \$     Cold Chisels, \$   b   10\$ @ 10\$ \$     Chucks   \$   b   10\$ @ 10\$ \$     Chucks   \$   b   10\$ @ 10\$ \$	Forks.—Hay, Manure, &c., Asso, 1st. dis 600£10£10 % Hay, Manure, &c., Phila, list	Lane & Crescent Planters   Act   Act
Augers and 5118.    Douglass Mg. Co	Beach Patent         each, 88,00, dis 20 %           Morse's Adjustable         each, 87,00, d's 20 @ 20&5           Danburr         each, 86,00, dis 30 @ 30&5           Syracuse, Balz Pat         dis 25 %           Clumms         Providence Tool Co,'s Wrought Iron         dis 25 %           Adjustable, Gray's         dis 20 %	die 60A104	Hollow-Ware.
Sold	Adjustable, Brow's	Mire, low line   Mottes   Mire, low line   Mire, Morse's   Mire, Morse's   Mire, Morse's   Mire, Morse's   Mire, Morse's   Mire, Brown & Sharpe's   Mire, Brown & Sharpe's   Mire, Brown & Sharpe's   Mire, Brown & Sharpe's   Mire, Brown & Mire,	Iron- Stove Hollow-Ware. Ground, dis. 60 & 10 & 60 & 10 & 5 Stove Hollow-Ware. Unground dis. 70 & 70 & 5 Stove Hollow-Ware. Unground dis. 70 & 70 & 5 Standeled and Timed Hollow-Ware dis. 50 & 10 Oval Bollers, Saucepans and Glue Pots di. 10 & 35 Grav Enameled Ware dis. 10 & 40 & 5 Rustless Hollow-Ware dis. 50 & 40 & 5 Galvanized Tea. Kettles dis. 50 & 60 & 5
Sangel   Jennings' Augers and 1876   1876	Clips.	Double Cut, Ivee"   dis 508.104.00 %	Galvanized Tea-Kettles
Douglass	Cockeyes         dis 50 \$           Cocks         Brass           Hardware list         dis 55&2 \$           Coffee Milis	Halters.—Covert's Pat. 16 Jute dis 50&2 \$ Covert's Hemp Horse and Cattle Tile	Cost Pron- Bird Cage. Sargent's list
Tree' No. 4, per dox, \$00.   dis 40 \$     Swan No. 1, \$26 No. 2, \$22.   dis 70 6 7085 \$     Stear No. 1, \$26 No. 2, \$22.   dis 70 6 7085 \$     Stear No. 2, \$48.   dis 20 \$     Stear No. 2, \$48.   dis 20 \$     General No. 2, \$48.   dis 30 \$     General No. 2,	The "Swift," Lane Bros	Handled Hammers.  Mavdole'sList Dec. 1. 1885, dis 25 @ 25&10 % Cheney's	Cotton B. Luc. Reading list
Double Cut, Artwell's, \$\vec{v}_{0.00}\$ \$\vec{v}_{0.00}	Bemis & Call Co. 's Call's Patent Inside die 30 % Excelsior die 50 % Cools'e Extension die 25 % J. Stevens & Co. 's Calloers and Dividers die 20 % Coopers' Tools. Bradley's die 20 % Barton's die 20 % L & L J. White die 20 % Albertson Mfg. Co die 30 % Eestty's die 40 % 40 % Sandusky Tool Co die 30 % 30 % 5 %	Atha Tool Co	Wire Coat and Hat, Gem, list April, 1886. die 45 s Wire Coat and Hat, Miles' list April, 1886. die 45 s Hidestructible Coat and Hat die 45 die
Williams' or Holt's, for wood	Heatty's	3 to 5 h	Press
## Buck!s	Wadsworth's	\$\Psi\$ dos, \$48. Nickeled, \$\$7; 3 Hands, Folished, \$\Psi\$ dos, \$72; Nickeled, \$\$4	Ottlean 25e 21e 20e 19e 18e 118 5a (9 5a 7a; 10 to 10
Awis, Brad Nets. &c.  \[ \text{twis, Sewing, Common.}  \$\text{\$\tex{	Carry Combs.   dis 50&10 @ 50&10&10 & 50 & 1	Fronze fron Drop Latches. Nuts, \$1.50x, 70s net C Jab d Store Door Handles—Nuts, \$1.50x; Plate, \$1.10: no Plate, \$0.88	
A wi and Tooi Sets. Sets. Awis of Toois, No. 20. Fdos. \$10 - dis 50 & 10 5	Jampers. &c.	Hickory Firmer Chisel, large # gross 5.06 Apple Firmer Chisel, assorted # gross 5.00   N Apple Firmer Chisel, large # gross 6.00   N Apple Firmer Chisel, large # gross 6.00   N Apple Firmer Chisel, assorted # gross 3.00   N Apple Firmer Chisel   N Ap	tandafd
trad Sets, Stanley's Excelsior, No. 2, \$4.00. dia 30&10 \$\frad Sets, Stanley's Excelsior, No. 3, \$6.50. \\ \text{trad Sets, Stanley's Excelsior, No. 3, \$6.50.} align*  Loose Joint, Japanned Loo	Door Springs.	Shift Co.   Fact   File, assorted   Fi	ron Head Picks, Sarkent's \(\psi \) doz \$1.25, dis \$0&10 \) to eMallets, \(\psi \) itck in bandie \(\psi \) doz \$2.00 dis \$5 \) se Axes, Small Cast or Mail \(\psi \) doz \$1.25, dis \$2.00 net ombination lice Tools \(\psi \) ross \$55.00. dis \$50\)£to eme lee Pick and Tools \(\psi \) gross \$55.00. dis \$50\)£to except Spitulng loc Chisel \(\psi \) gross \$55.00. dis \$50\\$£to E
Ower grades, special branch of the description of the first state of the description of t		Champion	Tee Tongs
Less than 10 sets	Vatrous.       dis 15&10 @ 25 ¶ R         & I. J. White.       dis 20&5 ¶ C         iradley's.       dis 35 ¶ C         distable Handle       dis 20 @ 25 ¶ C	S, Wood Track	Dek Asso're list Dec. 20, 1886
Balances.         dis 50 ≰         Clark* Mortise Gravity.         dis 50 ≰         Sargent's. Nos. 1, 2, 5, 11, 13.         dis 50 ≰         Bargent's. Nos. 1, 2, 5, 11, 13.         dis 75&10 € 10 ξ         Sargent's. No. 12.         dis 75&10 € 10 ξ         di	lacksmiths' Self-Feeding     each, \$7.50, dis 20.5       reast. P. S. & W.     dis 40&10.5       reast. Wilson's     dis 30.85.5	terring improved (Anti-Friction dis 55&1) % (etor. No. 1, \$15; No. 2, \$16.50; No. 3, \$18 dis 50&2 \$ w heritree	Rain's Rosewood or Cocobolo.
## Write Metal	atchet, Whitney's dis 20&10 & Cr atchet, Weston's dis 20&25 & S atchet, Moore's Triple Action dis 25 & 30 & W Thitney's Hand Drill, Plain, \$11.00 & Adjustable. \$12.00 dis 20&10 & M Tilson's Drill Stocks dis 10 & 6	No. 4, \$12; No. 5, \$14.40; No. 6, \$18.60; No. 6,	vaded Co., Butcher, Shoe Bread, &c.,dis 256,3314 §           xy and Straw         See Hay Knives           ble and Pocket         See Cutlery           K nobs         See Cutlery           for Mineral         70e           oor Por, Jap'd         85e           oor Por, Por         \$1.00 @ 3.25           oor Por, Plated         \$2.00 @ 3.00           emacte Door Knoos, new list         dis 40g40£10 g           le & Towne Wood Knobs, list Dec, 1885         dis 40g
Trank   Cone's	Morse	Anne   Steel anter-Frectum   Color	TRILLING FIRM   TOO   TOO
Oommon Wrought	Gg seaters. Cr. Volos, \$2.50 N. L. Dover. \$ dos, \$2.50 N. L. Dover. \$ dos \$4.50, dis 334 % N. L. Dover. \$ gro, \$17.00a318.00 andard (Standard Ce.). \$ gro, \$17.00a318.00	rescent	utter, Porcelain
Sentacky Narvent's list	ppex Standard Co.). \$\psi \text{src, \$12.00}\$ Bu pid Standard Co.). \$\psi \text{src, \$12.00}\$ Bu pid Standard Co.). \$\psi \text{src, \$15.00}\$ Bu dumph T. & S. Mfg. Co.). \$\psi \text{gro, \$10.566811.50}\$ Bu vance No. 1. \$\psi \text{gro, \$10.566811.50}\$ Ye vance No. 2. \$\psi \text{gro, \$10.00}\$ To vance No. 2. \$\psi \text{gro, \$10.00}\$ Uu vance No. 2. \$\psi gr	Int's Broad   Full	miar. No 9, without Guards — \$ doz \$5.75. ular. Liftwire No. 0, without Guards \$ doz \$5.75. ular. Hinge Tip No. 0, without Guards \$ doz \$6.25. ular. Hoftom Lift, without Guards, \$ doz \$6.25. ular. L. Safetv Lift Wire, no Guards, \$ doz \$6.25. ular. U. S. Safetv Lift Wire, no Guards, \$ doz \$5.00  srds for Tubulars. add \$ dos. uce, small, \$0.01 sidd \$7.25; Large, \$9.75. dis20a25 s ther's Tin R. R

	May 12, 1887.
r, C	F Peck's
de e	Relly's   Clis 40&10 & 40&10&5
é¢ ollov	Ten Eyek Edge Tool Co
	Hay Knives. Lightning. P doz \$18, dis 25 @ - 5
10& 5&5 Lock	Wadsworth's
&10 a 25	#Inges. Wrought from Hunges— Strap and T.
s 40 s 25 3316 0&5	Screw Hook and (8, 10, 12 in. # h 4 6 444 5 5 trap. 14 to 36 in. # h 3 6 344 6 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
0&5 0&2 &10	14 in, & up, * h 3 @ 334
8 45 &10 &10	Rolled Blind Hinges, Nos. 32 and 34
\$ 50 &10	Rolled Raiseddis 70&10 1
s 50 s 40 &10 &10	Geer's Spring and Blank Rutts
&10 8 1136	American, Gem, and Star, Japanned dis 26 i American, Gem, and Star, Bronzed dis 26 i Oxford, Bronze and strass net
5&5	
0&5 0&5 &10 &10	g Chicago
s 15 s 10	N. E. Reversible
s 15 s 20 s 30	\( \text{N. Y. State} \) \( \text{\psi} \) \( \text{doz} \) \( \text{\$\frac{1}{5}} \) \( \text{00} \) \( \text{dis} \) \( \text{\$\frac{1}{5}} \) \( \text{dis} \) \( \text{50} \) \( \text{dis} \) \( \
e 25 . 60	g seymours. dis 45&10 t Shepard's, Nos. 1, 2, 10 and 20.41s 60&10 and 10 to 1 Shepard's, No. 3 Shepard's, No. 3 Reed's tath and disconnection dis 60&10660&10810
s 35 s 35	Hoes. Handled— Garden Morros & C.
8 35 8 35 8 35 8 35	Magtedis 50 1
1, ne 1 25 1 30	D. & H. Scovil
40	Lare's Improved Scovil Pattern dis 15 & 3 & 4 & 4 & 4 & 4 & 4 & 4 & 4 & 4 & 4
30	Hubbari & Co., "
\$1.7	Hog Kings and Riugers.  Hill's Improved Ringers # doz. \$5,50 @ 5,75 Hill's Old Style Ringers # doz. \$4,00 @ 3 %
85	Hill's Rings.
£5 5	Blair's Hog Ringers doz. \$2,50 Blair's Hog Rings doz. \$2,60 Champion Ringers doz. \$4,00
30 9 84.50	Brown's Ringers # dog. \$2 00
9,00	"Moore's " Differential Duller Block
10 6	I Image
10 9 &5 9 20 9	Stove Hollow-Ware. Ground. dis. 60 & 10 @ 60 & 10 @ 5 g Stove Hollow-Ware. Unground dis. 70 @ 70 & 5 g Knameled and Tinned Hollow-Ware— Kettles
10 9	Oval Bollers, Saucepans and Glue Pots d. 30 & 35 & Grav Enameled Ware
60 % 10 % 25 %	Manueled and Tinned Hollow Ware
35 % 40 % 50 %	Simper Plated
10 %	Rogers & Brother
12 € 12 € 12 €	Gar Fron- Bird Cage. Rergent's list. dis 60&10&10 9 Bird Cage. Reading. dis 60&10&10 9 Clothes Line. Sargent's list. dis 60&10 @ 60&10 10 10 Clothes Line. Reading list. dis 60&10 @ 60&10 10 10 10 10 10 10 10 10 10 10 10 10 1
10 %	Coat and Hat, Reading1's 50&10 @ 50&10&10 9
'87. 9 40	Cotton Pat. N. V. Mallet & Handle W'ksl dis 30 5 Tastel and Picture (T. & S. Mfr. Co.) dis 50 5 Wrought Staples, Hooks, &c See Wrought Goods Bench Hooks
5 € 10 €	Bench Hooks
10 % 10 % 25 %	Wire to an and that start April, 1886. dia 45 lindestructible Coat and Hat dis, 45 g Belt dis 75&10 at 80 a
10 % 80 %	Sush
P B	Hooks and Eyes—Brass. dis 60&10&10 % Fish Hooks. American. dis 50 % Herse Nails. dis 50 % Nos. 0 7 8 9 10
10% 10% 25%	Ausable286 266 256 246 236, 118 25&11 @25&10&10 % Clinton, Fin. 246 226 216 206 196
20 %	Tulcan 234 212 202 102 102 103 118 56 6 567 85 Vulcan 234 212 202 102 102 103 118 104 10 10 6 567 85 Northwest'n 256 252 212 206 118 104 10 6 204 10 8 Globe 234 212 202 102 108 118 104 10 6 204 10 8
	A. C
35# net 0:	New Haven, 286 206 206 236 236 distant (a 25&10&10 6 8aranac. 236 216 206 196 186 distant 3085 a Champion. 256 256 266 216 206 distant 10 10 10 10 10 Canewell. 286 266 256 246 236 distant
net 10 %	Rench Hoks
2.00 1 €	Standard         dis 75 5           Extra         dis 60x10x10 5           N. Y. B. & P. Co., Standard         dis 60x10x10 5           N. Y. B. & P. Co., Dundee         dis 70x5 5
07	N. Y. B. & P. Co., Dundee
dle die	NOVER FIGE BY SAME STATE OF THE
0 %	Ice Mallets, Pick in bandle
uet net	Roger's L'ghtning Ice Chisel
2	Roger's Lightning fee Chise!
0	Kettles. Spun. Stamped. Brass. 7 to 17 in., \(\psi\) b
5 %	
5%	New No.   New
5 %	E with wharponers.
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Parkin's Applewood Handles \$\vec{\psi}\$ doz \$8.00, dis 40 \$ Parkin's Rosewood or Cocobolo. \$\vec{\psi}\$ doz \$8.00, dis 40 \$ <b>Knives.</b> Wison's Putcher Knives
3 6	Knives
*	Ames Bread Ruives
15	Table and Pocket
10	S5¢
-	Yale & Towne Wood Knobs, list Dec., 1885dis 40 \$ Furniture Plain
MMM	
***	Shutter, Porcelain dis 55&10 s Carriage Japanned # gross 80s, dis 60&10 s  Ladies. dis 55&10
8	Melting, Sargent's
15	Heiting, Warner's

Ware

Lawn Mowers. Standard Machinesdis 50&5 % Cheaper Machinesdis 50&10 @ 60 %	Picks. Railroad, 5 to 6, \$12,00; 6 to 7, \$13dis 60&5 @ 60&10 \$ Adze Eye, 5 to 8, \$12,00; 6 to 7, \$13dis 60&5 @ 60&10 \$
Cheaper Machines	Picture Nails.  Brass Head, Sargent's lis.t
Wood, Commou	Preture Alls.  Brass Head, Sargent's list
lennings" Star". # doz \$2.50	N'les' Patent
Dean's	Pipe, Wrought Iron.—List March 23, 1887.
raper's Mason's Linen, 84 tt., No. 1, \$1.25; No. 2,	Planes and Plane from dis 4216 S
\$1.75; No. 3, \$2.25; No. 4, \$2.75; No. 5, \$3.30 dis 55 \$ otton Chalter No. 4, \$2; No. 416, \$2.50 dis 10 \$	Wood Planes— Molding
ofton Chalk. dis 58 samson. Cofton. No. 4, 52: No. 436, 52:50. dis 10.8 samson. Cofton. No. 4, 52: No. 436, 52:50. dis 10.8 samson. No. 5, 47:00: No. 3, 47:50: No. 3, 47:50: No. 4, 48:50: No. 4, 48:	Molding.   dis 40 @ 40 kS \$   Hench. First Quality   dis 50 kT \$   Bench. Second Quality   dis 50 kT \$   Balley's (Stanley R. & L. Co.)   dis 30 & 10 \$   Con. Plant
nsons' Linen, No. 34, \$1.30; No. 10, \$1.30; Mo. 10, \$1.30; Mo. 20, \$2.75; No. 19, \$3.25; No. 20, \$2.75.	Balley's (Stanley R. & L. Co.)
nsons' Linen, No. 34, \$1.50; No. 1, \$6: 30. dis 45. geoms' Colored Cotton.  (ire 'lotnes, No. 18, \$3.75; No. 19, \$3.25; No. 20, \$2.75. entitlator Cord, "mson Braided, White or Drait Cotton	Steer's Iron Planes
Locks, Padlocks, Cabinet Locks, &c.	Meriden Mal. Iron Co.'s Iron Planesdis 30&10 \$ 0avis's Iron Planes
Reading Hardware Co. (list Jan. 1, 95).dis 70@70@10 \$ Livingston & Co	Plane Irons
Plate	Plane Irons, Buck Bros
Barnes Mfg. Co	Single and Cut
Locks, Padlocks, Cabinet Locks, Color Locks, Latches, &c. List. Dre. 30, 76, chgd Feb. 2, 78, dis 50&10 & 55&10 & Levin, List. Dre. 30, 76, chgd Feb. 2, 78, dis 50&10 & 55&10 & Levingston & Co	Plane   Frons-   Plane
Romer's Night Latches dis 20 %	Hall's Pat. Compound Lever Cutting Nippers, No. 4, 5 ln., \$13.50; No. 4, 7 ln., \$21.00 Pdoz dis 20&10a.3314 \$
"Shepardson" OF U.S. dis 40 to 5	Humajon & Beckley Mfg. Co
Panel agle, Paylord Parker and   List March, 84, revised	Bureka Pilera and Nipperv
Corbin	P. S. & W. Tinners' Cutting Nippersadd 6 % dis 10 % Carew's Pat. Wire Cuttorsdis 20 %
Hetz, Nos. 86 to 98	Morrill's Parallel, per doz., \$12 dis 30&5 \$ Cronk's 8 in., \$15; 10 in., \$21 dis 40 %
Sarues Mfs. Co. dis 40 % agle and Corbin Trunk dis 25x2 %	Regular Listdis 70&10@70&10&10 & Disston's
Sept S N. Y. Hasp LOCK   This set   March, No. FevtSed	Hutmann & Beckley Mfg. Co gas Plers. Gas View.
id. neks- Manufacturers' list, Dec. 23, '64 dis 70&2.5 70&5&2 5	Davis Inchrometers dis locito & 10 to 10 pers dis locito & 10 pers di
Vale Lock Mfg. Co. 8	Fost Hole and Tree Augers and Diggers.
Romer's. Nos. 0 to 91	Fletcher Post Hole Augers # dos \$30,00, dis 20210 & gureka Diggers # dos \$36,00, dis 20 & Eureka Diggers # dos \$16 & \$17
Romer   Rod   Romer   Rod   Romer	Vaughau's Post Hole, Auger, per dos, \$24.00 (a \$0.00 Kohler's Little Glant
'Star' dis 15 \$ 'Star' dos. \$9: dis 40 \$ 'Itoree Shoe.' \$\( \text{dos.} \) \$9: dis 40 \$	Kohler's Hercules.   # dox \$18,00   Kohler's New Champion.   # dox \$16,00   Kohler's New Champion.   # dox \$16,00
Barties Mfg. Co. dis 30 \$ See 's dis 30 \$ See 's dis 25 \$	Scangidler  Rydn's Post Hole Diggers  Croffs's Post Rara  402 \$10 dt \$170 dt \$24
	Gibb's Post Hole Digger, \$\(\phi\) doz \$500. \(\phi\) \$\(\phi\) \$\
Lumber Tools.	Antrini Combination. # dos \$5:00 @ 5.50 Hoosler # doz \$8:00
eel Socket Peavies. \$ doz \$21.00 all, Iron Socket Peavies. \$ doz \$19.00	Pruping Hooks and Shears. Disaton's Combined Pruning flook and Saw, & dos
Frain's Fd	Disston's Pruning Hook W dez \$12.00, dis 20210 % E. S. Lee & Co.'s Pruning Tools dis 40 %
ant Hooks, Mail. Socket Clasp, Blue Line Finish	Henry's Pruning Shears Pat # doz \$3 75 @ \$4.00 net Wheeler M. & Co. * Co
ann Hoogs, Mail. Socket Clasp, "Blue Line Finish and Hooks, Mail. Socket Clasp Common \$\psi\$ doz \$16.00 and Hooks, Clip Clasp, "Blue Line" Fin. \$\psi\$ doz \$16.00 ant Hooks, Clip Clasp, "Blue Line" Fin. \$\psi\$ doz \$16.00 ant Hooks, Clip Clasp, "Blue Line" Fin. \$\psi\$ doz \$16.00 and Spikes. \$\psi\$ doz \$1.20 \$\psi	White Mountain # doz \$5.00 @ 5.00 Antrin Combination # doz \$5.00 @ 5.00 Antrin Combination # doz \$5.00 @ 5.00 Antrin Combination # doz \$5.00 Prupring Hedin # ad Sichry doz \$15.00 Liston's Combined Pruning Hook and Sa'v # doz \$15.00 Liston's Combined Pruning Hook and Sa'v # doz \$18.00 Liston's Combined Pruning Hook & doz \$12.00, diz 20.210 % Liston's Pruning Hook & doz \$12.00, diz 20.210 % Liston's Pruning Hook & doz \$12.00, diz 20.210 % Liston's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.25 & \$1.00 net Henry's Pruning Shears # doz \$1.00 net Henry's Pruning Henry # doz \$1.00 net Henry's Pruning Henry # doz \$1.00 net Henry's Pruning Hen
and Spikes	Pulleys.—dot House, Awning. &cdis do&10 \$ Japanned Screw
# d02 like Foles, Fike only, # 16:00 11:00 13:00 16:00 20.00	Japanned Side
dvs.    Re Pelles not lifoned,	Empire Saah Pulley. de 55 g 60 g Hay Fork. Solid kye, \$4.00; \$\times \text{ivivel}, \$4.50; \$\times \text{ivivel}, \$4.50; \$\times \text{ivivel}, \$4.50; \$\times \text{50} \text{30k} \text{10k5} \text{50k} \text{10k5} \text{50k1} \text{60k1} \tex
vaint Hocks	Hay Fork, "Anti-Friction," 5 in. Solid, \$5.70dis 50 s. Hay Fork, "F" Common and Pat. Busheddis 20 s.
og Binders	Hay Fork, Redd's Self-Lubricating
uare Steel Boot Calks \$\overline{\pi}\$ 100 \$12.50 hain Rafting Dogs 100 mod \$10.00: large, \$12.00	Tackle Blocks
ing garing bogs 4 200 and 4 doz \$30.00	Pitcher Spout, Cheaper Goods. dis 70&5 @ 70&10&5 &
our-ounce Bottles P doz. \$1.75 P gro. \$17. Cones	Sagglers' of Drive, good quality
M milets	Fitcher Spout, Cheaper Goods, dis 70& 0 70& 0 70& 0 70& 0 10& 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Mattecks Regular list dis done de contro	Bolid Tinners'
Ment Curiers 1 2 3 4 xon 4 - Nos	Rail.
Ment Cuiters   1   3   4   4   4   5   4   4   4   5   4   4	Tinners
ales Pattern Nos. 11 18 18 18 dts 70&50,70	B. D. for N. E. Hangers— Small. Med. Large
ales Pattern Nos. 11 12 13 418 70&56a70 45:00 45:00 45:00 45:00 46	Terry's Wrought tron, # foot. 446 @ 56 Victor Track Rull. 76 # foot. dis 5022 4
Nos. 1 Edch. \$5.00 7.00 10.00 25.00 50.00 00.00 Herdride dis 30 3	Victor Track Rail. 7: \$ foot. dis 00&2 \$ #Akk6 \$ Caat Steel dis 60&10&10 27 \$ Maileable. dis 60&10&10 27 \$ Maileable. dis 60&10&10 27 \$ Maileable. dis 60&10&10 27 \$ Plqua Handle and Mfg. Co. dis 70&5 \$ 20\$ \$ 10
Nos	Piqua Handie and Mfg. Codis 70&5 04 70&10 & 70 & 10 & 10 & 10 & 10 & 10 & 1
Nos	Kazers. J. R. Torrey Rasor Co
les Challenge Nos. 1 2 dos \$22.00 30 90 40,00—d's 456453 10 s	Gentine Emerson
eser's No. 55	Torrev's
Nob.	Lamont Combination
Each \$50,00 75,00 80,00 225,00—dis 20 @ 25 % sef Shavers Enterprise Mfg. Co.ldis 20&10 @ 30 \$	A
Mincing Knives. 1 blade, \$7: 2 blades, \$12: 2	Rods.—Stair. Brass
hadborn's Smyster Deet view of the Smyster Bright S	Barn Boor, Sargent's list
nith's. W doe, Single, \$200; 20dole, \$0dis \$06246 % habb & Cowles	Active (Anti-Friction)   dis 55 g
ebbins Genuine	Manila
nase's Hard Metaldis 50&10 \$ 18h's	Manila, Hay Rope
Molasses Gates	Sisal
37.00 8.00 9.01 10.00. # dox, dis sociocio s Money Drawers. — # dox., \$18 @ \$29.	Sisal, Tarred Rope
Money   Draw	Cotton Rope # 5 15 @ 18¢ net Jute Rope # 5 7¢ Rules.
tre Nalis, Standard Penny	Boxwood
re Carpet Natis.   See Lacks	Sad Irons. From 4 to 10, at factory \$ 100 h \$2.50 @ \$2.75
# doz \$9.00 dis 25 5	Sad Irens.   # 100 h \$2.50 @ \$2.75
Nail Mets.—Square Fig. 83.25	Gleason's Shield and Tollet. dis 25 s Mrs. Pott's Irons. dis 25 s Mrs. Pott's Irons. and Sad Iron. \$\frac{1}{2}\$ dis 40 s Combined Fluter and Sad Iron. \$\pi\$ dos. \$15.00, dis 15 s Fox Reversible. Self-Fluter\$\pi\$ dos. \$15.00, dis 15 s Fox Reversible. Self-Fluter\$\pi\$ dos. \$\pi\$ dos. \$\pi\$ dis 15 s New Enriand\$\pi\$ dis 26 good: 0.0 dis 30 \pi\$ 33% \$\pi\$ dis 35 \pi\$ dis 35
Nut Crackersdis 40 % ble Humason & Beckley Mfg. Co.)dis 40 % ake's ratters	Fox Reversible, Self-Fluter
	New England
uare	Waddell & CO dis 30 @ 33/4 \$  Bash Cord.
iots less than 100 m, w m, and res, I m coxes add if [	Patent, good quality b. 136 @ 1316
o list.  nkum.  Government	Common Russia Sash # 5 13366 Patent
akum. Government.  \$\psi\$ 0 d/\delta\$  S. Navy.  \$\psi\$ 0 d d d d d d d d d d d d d d d d d d	India Cable Laid
NT	White Cotton branced, and quanty, w 5 285 2 28 Common Russia Sash.
14.00; No. 3. 41.50 % dox	Silver Lake, C Quality, White coniv
tor's Patent or "Faragon " Zincdis 60&10&10 % for's Patent or "Paragon" Brass	Sylvan Spring, Exira Braided, Drab
107's Patent Of "Faragon Brass   Clis 50 S   massed's Fin and Zinc   Clis 60 S   matend's Hrass and Copper   Clis 50 S   oughton's Zinc   Clis 60 S	Samson, Braided, White Cotton546 dis 30 @ 3025 \$ Samson, Braided, Drab Cotton556 dis 30 @ 3025 \$
oughton's frasdis 50 %	Samson, Bradded, Linen 30 dis 30 @ 30&5 % Samson, Bradded, Linen 80 dis 30 @ 30&5 % Sash Locks.
thber —	Clark's No. 1, \$10.00; No. 2, \$8.00 \$\pi\$ gross
Extra	Morris and Triumpo, flat Aug. 16, 1886dis 50&10 % Walkers
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Reading. dis 66% 210 @ 66% 210 210 210 210 210 210 210 210 210 210
Y. B. & P. Co., Salamander 5 5 656, dis 35 6 cokins, Standard 7 5 806, dis 35 6	Morris and trumps, instag. 15, 2002. 10 Sept. 10
N. Y. B. & P. Co., "alamander	Universaldis 30 \$
N Y B & P. Co., Salamander. # D 65c, dis 35 % tenkins' Standard. # D 80c, dis 35 % oscillateous and tenkins' Standard. # D 80c, dis 35 % oscillateous and tenkins and tenkins and tenkins and tenkins. 10c liter # D talish Packins. 13 % liter # D talish Packins. 15 % liter # D talish Packins. 16 % liter # D talish Packins. 16 % liter # D talish Packins.	Kempshall's Gravitydis oo's
10   10   10   10   10   10   10   10	Kempshall's Model. dis 60 60 60 2:10 5 Kempshall's Model. dis 60 60 60 2:10 5 Corbin's Daisy, list February 15, 1886. dis 70 5 Payson's Perfect.
100   110   100   110   100   110   100   110   100   110   100   110   100	Common Sense, Steller and Gross and Gla 30 g Kempshall's Model.  Kempshall's Model.  Corbin's Daisy, list February 15, 1886. dis 60@00&10 g Hugunta's Ferfect.  Rugunta's Sewa and Improved Adjustable Saan Ralaces, list Jan. 5, 1887. dis 2c.82.82 g Senses
	Hugunin's New Sash Locks, list Jan. 5, '87 dis 25&5&2 \$
	auces, iiis vew Saah Locks, iist Jan. 5, '87 dis 25 & 5 & 2 \$ 8todoard "Practical" dis 10 \$ fives Patent. dis 5 \$ Liesche's Nos. 100 & 110, \$\pi\$ gro, \$8; 105, \$10. dis 20 & 10 \$
Pails, distransized Water.  Outsta.  Units Light Weight, ₹ dos.  10 12 14  11% Light Weight, ₹ dos.  2,75 10 3,00 3,25 3,70  111 10 2 2 2 3,00 3,25 3,70  111 10 2 3 2 3,00 3,25 3,70  111 10 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	auces, ins. New Sash Locks, itst Jan. 5, 87 dis 2525.2 \$ 8todgard "Practical" dis 10 \$ 10 fves Patent. dis 5 \$ Liesche's Nos. 100 & 110, \$\psi\$ gro, \$\psi\$; 105, \$\psi\$10. dis 20\&10 \$
	Hugunin's New Sash Locks. list Jan. 5, '87 dis 25&5&2 \$

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Picks. Raitroad, 5 to 6, \$12,00; 6 to 7, \$13dis 80&5 @ 60&10 \$ Adze Eye, 5 to 6, \$12,00; 6 to 7, \$13dis 60&5 @ 60&10 \$	Di
Picture Naiis.  Brass Head, Sargent's Mt	At
Porcelain Head, Sargent's list	At
## Pinking Irons ## dos 65e ne  Pipe. Wrought Iron — List March 23, 1887.  ## and under, Pialn	At W. W.
1% and under Fight dis 32% \$ 1% and over Plain dis 22% \$ 1% and over Plain dis 50% dis 21% \$ 1% and over Galvanteed dis 50%	Pe
Botter Tubes dis 42 % Piènes du Piène Irons dis 42 % % Piènes du Piène Irons Moiding	Pe Pe
Molding	Ric Ric Bo
Balley's (Stanley R. & L. Co.). dis 30&10 \$  Fron Planes— Balley's (Stanley B. & L. Co.). dis 30&10 \$  Micellaneous Planes (Stanley B. & L. Co.). dis 30&10 \$	Bo Bo
	110
Birmingham Plane Co	I w
Plane froms. Butchef's \$8,00 @ \$5.25 to 2 Flane froms. Buck Bros. Buck Bros. Glass Splane froms. Middlessex Mfg Co "Baldwin from."	Re
Plane   170ns-	Co.
Button's Patent	Na Ha Ha
Hufrason & Beckley Mfg. Co. dis 50%50%16 % Gas Pilers, Custer's Nickel Flated. dis 60% % Gas Pilers, Custer's Nickel Flated. dis 60%5 % Sure& Pilers and Nippers. dis 60% % 60	Bei Bei
Russell's Parallel dis 25 % P. S. & W. Cast Steel dis 0 % P. S. & W. Tinners' Cutting Nippers add 6 % dis 10 %	Ati Ati Ha Die
Carew's Pat. Wire Cuttiffs	At At
File   Bar   Alevels	Atl
Davis Iron Levels	Ha Ha Un
Round or Square, 1 qt.   P gro \$14.50 @ \$15     Round or Square, 2 qt.   P gro \$14.50 @ \$26     Post Hole and Tree Angers and Diggers.     Samson Post Hole Digger.   P dos \$36,00, dis 20x10 \$   Fletcher Post Hole Augers.   P dos \$36,00, dis 20x10 \$   Fletcher Post Hole Augers.   P dos \$36,00, dis 20x10 \$   Eureka Diggers.   P dos \$36,00, dis 20x10 \$   Eureka Diggers.   P dos \$36,00 & \$40,00 \$   Vaughan's Post Hole Auger, per dos, \$24,00, alis 40 \$   Konler's Little Glant.	Un Chi Chi
Fletcher Post Hole Augers # dos \$36.00. dfs 20 \$  Eureka Diggers # dos \$16 (a \$17  Leed's # dos \$6,00 (a \$0.00	Cha
vaugman's Fost Hole. Aliger, per dos, \$22,00., dis 40 %           kohler's Little Glant.         \$ dos \$18.00           Kohler's New Champion.         \$ dos \$14.00           Kohler's New Champion.         \$ dos \$14.00           Kohler's New Champion.         \$ dos \$16.00           Kydn's Post Hole Diggers.         \$ dos \$10.00           Crouls's New School	Sca Sca
Schneidler # doz \$16 @ \$17 Ryda's Post Hole Diggers # doz \$24 Crofik's Post Bars doz \$506, dis 50&5 @ 50&10 \$	Ad Bos Bos
Pots Hole Digger, \$\phi\ d\forestar \text{40} \text{80} \\ Pots Le Partier	Foo Shi
Potate Parers. White Mountain \$\psi \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Poi
\$18.00. ds 20210 2 Disston's Pruning Hook & S. Lee & Co.'s Pruning Tools. ds 40.5 Pruning Shears. Henry Pat. # dor \$5.75 @ \$4.00 net Henry's Pruning Shears. # dor \$5.75 @ \$4.00 net Wheeler. M. & Co.'s Coro bination. # dor \$1.25 dis 20 5	Doi Dis
Henry's Pruning Shears dos \$4.25 d \$4.50 net Wheeter. M. & Co.'s Combination dos \$12, dis 20 \$ Dunlap's Saw and Chis dos \$8.50, dis 30 \$	Buc Sta Sta
\$18.00.	Sar Sar
Japaned Side	Sar Kn Kn Kn
Hay Fork, Solid Eye, \$4.00; Swivel, \$4.50; \$4.50; \$4.55; Hay Fork, "Anti-Friction," 5 in. Solid, \$5.70dis 50 \$4.50; \$6	Set Cha Cla
Hay Fork, Tarbox Pat. Iron. dis 20 st. Hay Fork, Reid's Self-Lubricating. dis 60 st. Shade Rack. dis 45 st. Tackle Blocks	Cra Elli Alli Kol
Empire Sash Pulley	Ser. Ser.
Figure 1 of Drive good quality W doz 60 4 65 6 Bemis & Call Co.'s Cast Steel Drive, dis 50 5 5 Bemis & Call Co.'s Springfield Socket	Fra Wo
Pitcher Spott, Cheaper Goods. dis 702.00.5 \$ [*]\$ ncabe.           Figncabe.         Saddlers' of Drive, good quality.         ** dox 604 @ 854           Bemis & Cali Co.'s Calt Steel Drive,         dis 602.5         Bemis & Cali Co.'s Springfield Socket.         dis 602.5           Spring, Good quality.         ** dos \$2.00 @ \$2.00         \$8.00         \$8.00           Spring, Leach & Fatent.         dis 15 %         \$8.00         \$8.0	E
Tinners Hollow Punches	Ma F
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B. D. for N. E. Hafigers—   Small   Med.   Large     Per 100 feet   \$2.15   2.70   3.25   net     Perry's Wrought tron, # foot   4546 356     Client Track Rull. 7# # foot   dis 5082 \$	H
Victor Track Bull. 7	Bed Hai Hai
Victor Track Hall. 7* \( \) fool \( \) \(\	Hai Jac Jac
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Kivets and Burrs.   dis 60&5 @ 60&10 &	Si G B
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Repe.—Mni'rs list, April 5, 1887.  Manila	Am Pru
Manila Tarred Rojee ♥ b 12½¢ € Manila. Hay Rope. ♥ b 13 ₡ Sisal	Bar Tin Sey Hei
Sisal   Hay Rope   Wand 5-16 inch # B 13/4   2   5   5   5   5   5   5   5   5   5	Hei Fire Sec Acr
Sisal, S'nzie Ply Lath Yarn	Dia Clij Vie
lvory dis 50 @ 55&10 %	Cle
Add   Fens.   \$100 a \$2.50 a \$2.75	R
Gleason's Shield and Tollet. dis 22 s Mrs. Pott's Irons. dis 40 s Enterprise Star Irons, new isst, July 20, 1882. dis 40 s Combined Futer and Sad Iron. 40 dos. 815.00, dis 15 s Fox Reversible, Self-Fluter 40 dos. \$24.00 net Chinese Laudry (N. E. Butt Co.). 854, dis 15 s New England 50 des 15 s Sand Paper and Emery Paper	P
Fox Reversible, Self-Fluter \$\psi\$ doz., \$23.00 net   Chrinese Laudry (N. E. Bust Co.) \$3.5, dis 15 \$ New England \$\psi\$, dis 10 \$ New England \$\psi	Slid R. Be
List April 19, 1886dls 25 @ 20&10 %   Waddell & CO	R.
Common	Hor Bi
Patent " B lof.	Mul Ox, To
Silver Lake, A Quality, Drab504. dis 104:1045 & Silver Lake, A Quality, Drab554. dis 104:1045 & Silver Lake, B Quality, White504. dis 204:1045 & Silver Lake, B Quality Drabbeg. dis 204:1045 \$	Dro
Sliver Lake, C Quality, White coniv	Buc Buc
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Biodard	M

HE IRON AGE	1 .
Saws         01840 ft.           Dission's Circular, Will and Cross Ciff.         01840 ft.           Dission's Hand, Panel, Rip &c.         01826 ft.           Atkins' Circular         0.98 50 5           0.98 50 5         0.98 50 5	Gern Cove Cove
Dission's Hand, Panel, Rip &c. dis 25 % Atkins' Circular . dis 90 % Atkins' Silver Steel Diamond X Cuts . \$\psi\$ foot 75 \( e\) Atkins' Some yet Front Dexter X Cuts . \$\psi\$ foot 55 \( e\) Atkins' Some yet Front Dexter X Cuts . \$\psi\$ foot 32 \( e\) Atkins' Special Steel Dismond X Cuts . \$\psi\$ foot 32 \( e\) Atkins' Champion and Electric Tooth X Cuts foot 30 \( e\) Atkins' Hollow Back X Cuts . \$\psi\$ foot 30 \( e\) Atkins' Hollow Back X Cuts . \$\psi\$ foot 30 \( e\)	Cove Cove Sp Wood
Atkins Champion and Electric Tooth X Cuts of 32 g  Atkins Hollow Back X Cuts	Balle Steam Bonn Steam
Peace Hand Panel and Rip       dis 20&10 @ 20&10&5 %         Peace Cross Cuts, Sinufard       # foot 25%         Peace Cross Cuts Thin Hack       # foot 28%         Peace Band Saws, all widths       dis 20&10 %         Richardson's Cifcular       dis 45	Ives' Doug Sp Tinn
Richardson's Mili	Bac Sol Bu Silve
Star Hack Saws and Blades	Me C. I Rec Wr Sin
White vermout. # gro #9 @ \$10 Red, Polished, and Varnished. # doz \$1.50, dis 25 \$	Ho Ho H. Gern Gern
Still Dill's Gentline. W doz #5 flo and #7 75 Ata 40.95 f.	Nick Brita Ellip
Stillman's Imita. P dos \$3.25and\$5.25.diss085cs004 to Common Lever P & Box \$2.00.0 its 0455 5 Morrill's No. 1, \$15.00. Nos. 3 and 4, \$24. dis 408.10 s Leach's No. 0, \$8.00: No. 1, \$15.00. dis 408.5 s Nash's dis 202.10 cs 202.10 cs 202.10 cs 10 s Hammer, Hotelakis dis 202.10 cs 202.10 c	Steel Nick
Alken's Genuine \$13 00, dis 50&16 \$4 kg/s \$4 kg/s in Initiation \$7.00, dis 50&6 \$5 kg/s in Initiation \$7.00, dis 50&6 \$5 kg/s in Initiation \$1.00	Dissi Wini Sti
Atkins Criterion	Sta Sta Black
Scales   Rectard   Recta	Hind Sand Wash
Scales	Wasi Wasi Wasi Arka
Scale Beams, List of Jan. 18, 1932dis 80&5 @ 80&10 % Scale Beams, Custer	Arka Turk Turk Lake
Scrapers.   Adjustable Box Scraper(S. R. & L. Co.),\$6,50, dis 30&10 \$ Box, 1 Handle.   \$\pi\$ dos \$\pi\$ .00, dis 10 \$ Box, 2 Handle.   \$\pi\$ dos \$\pi\$ .00, dis 10 \$ Box. 2 Handle.   \$\pi\$ dos \$\pi\$ .00, dis 10 \$ Box. 2 Handle.   \$\pi\$ dos \$\pi\$ .00, dis 10 \$ Box. 2 Handle.   \$\pi\$ dos \$\pi\$ .00, dis 10 \$ Box. 2 Handle.   \$\pi\$ dos \$\pi\$ .00, dis 10 \$ Box. 2 Handle.   \$\pi\$ dos \$\pi\$ .00 dis 20&10 \$ Box. 2 Handle.   \$\pi\$ dos \$\pi\$ .00 and \$\pi\$	Sener Sener Sta
Screen Corner Irona, Wagner's Ale 6914 10 \$	Gold "Mir Lustr Ruby
Dougtas M.g Co	Risin Dixe Boyn Parlo Yate
Stanley R. & L. Co.'s Varnished Handles   dis 60-210 \$   Stanley R. & L. Co.'s Black Handles   dis 60-210 \$   Sarkent & Co.'s No. 1 Forged Blade   dis 70-210 \$   Sarkent & Co.'s No. 20   dis 69-3210 \$   Sarkent & Co.'s No. 40 & 30 Cast Steel   dis 69-3210 \$   Sarkent & Co.'s No. 40 & 30 Cast Steel   dis 69-3210 \$   Sarkent & Co.'s No. 40 & 30 Cast Steel   dis 69-3210 \$   Sarkent & Co.'s No. 40 & 30 Cast Steel   dis 69-3210 \$   Sarkent & Co.'s No. 40 & 30 Cast Steel   dis 69-3210 \$   Sarkent & Co.'s No. 40 & 30 Cast Steel   dis 69-3210 \$   Sarkent & Co.'s No. 40 & 30 Cast Steel   dis 69-3210 \$   Sarkent & Co.'s No. 40 & 30 Cast Steel   dis 60-3210 \$   Sarkent & Co.'s No. 40 & 40 & 40 & 40 & 40 & 40 & 40 & 40	Tate Jet E Japan Fires
Sarkent & Co.'s No. 60, Round Blade	Tanana Steel
Champion.         dis 25 s.           Clarg's Patent.         dis 30 s. 334 s.           Criwford's Adjustable.         dis 30 s. 334 s.           Elirfor's Socket and Ratichet.         dis 25 s. 50 s.           Allard's Spiral. new Vist.         dis 49 s.	Swed Swed Tinne Tinne
Disston's Patent Excelsior   dis 45 s     Pluck Bros   dis 45 s     Pluck Bros   dis 45 s     Staniey R. & L. Co.'s Varnished Handles   dis 50.610 s     Staniey R. & L. Co.'s Black Handles   dis 50.610 s     Sarkent & Co.'s No. 1 Forged Blade   dis 70.810 s     Sarkent & Co.'s No. 80 s     Sarkent & Co.	Gimp Tinho Amer Copp Copp
Screws 10 the sets, No. 3, 112	Cigar Finis Huffs Trun Tinne Banke
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Bench, 100.   dis 55&10&10 6	Leate Bruss Shoe Linin Bily
Law, Hunt Point dis 20x10x0 x dis 70 x Coacn and Lag, dimiet Point dis 693/26693/x5 x Bed. dis 20x5 x dis 20x5	Jap Walk Dia Circ
Hand Rali. Am. Serew 19 Jack Screws, Millers Falls list. dis 50 @ 50&5 4 Jack Screws, P. S. & W. dis 50 @ 50&5 4 Jack Screws, P. S. & W. dis 60 & 10 & 10 & 10 & 10 & 10 & 10 & 10 &	Houb United Wire Steel
Bogers. Complete, \$4.00. dis 25 \$ Seythes. dis 25 \$	Ta Comr [ves' Enter Clari
Clipper, Full Polished, Boxed & Sharp \$7.00@7.25 German, Cast or Silver Steel, either Half Set or Waldron, in Straw \$6.50@8.75	Ta Sprin Chest Th Th
Grass Scythes—         8.50(gb.7.5           Silver Clipper, Boxed and Shartj         9.50(gb.7.5           German Steel, Half Set Waldron         4.76(gb.0.0)           Bush, Brambie and Weed         5.00(gb.2.5)           Clover         5.50(gb.7.5)           Imperfect Grass and Bush         4.00(g4.7.5)           Imperfect Grain         4.00(g4.7.5)           Scythe Souths         dis 50 \$ 50±10 s           Shears         dis 50 \$ 50±10 s	The Sheat Punc
Scythe Southsdis 50 \$50x10 \$ 50x10 \$ \$8hears dis 75&10 \$ 75x10x5 \$ Pruning See Pruning Hooks and Shears Harnard's Laran Telephones	Snips Tit Stam
Tinners'	Wood All II Nash Wiise
Shears	Acme
Howe Bros. & Hulbert. Solid Forged Steel	St
Sheaves   Siding Door	El
8. & E. list Dec. 18, 1885	
Ship Teels. L. & I. J. White	6
Shoes, Horse, Mule, &c.	The state of the s
1000 b lots. \$\psi \pm 9\forall 9\forall 6 \text{Shot.} -(Eastern prices.) \$\psi \pm 10\forall 6 \text{Phot.} -(Eastern prices.) \text{Drop.} \psi \text{bag.} \pm 10\forall for cash in 5 days. \$1.40 \text{Drop.} \psi \text{bag.} \pm 1.75 \text{Buck and Lhitted, \$\psi 5-\pm bag.} \$1.75 \text{Buck and Chitted, \$\psi 5-\pm bag.} \$40c \text{Shaveis and Spudes.} \$40c \text{Mess'Shaveis and Spudes.} \$40c \text{Nors.} -Jobbers frequently give 5 \pm 7\pm 5 extra on above.	
Shaveis and Spades.  Ames' Shoveis, Spades, &c. list Nov. 1, 1885dis 20 s  NoteJobbers frequently give 5 @ 7% \$ extra on above.  Griffith's Black fron	
Griffith's Black Iron	
Hubbard & Co       dis 20632047 %         Lehigh Mfg. Co       dis 50410 %         Payne Pettebone & Son, 11st January, 1886 dis 30 \$	
Remington   Allack   Iron.   Alla 50&10 a 3 5	
Columbus Wrt. Steel	4
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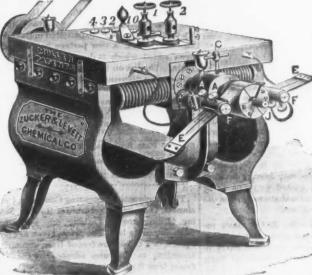
tran, new list. dis 30% 10 %  vert. dis 50% 2 %  vert, New Patent dis 50% 5 %  vert New B. dis 60% 2 %  vert New B. dis 60% 2 %  verd New B. dis 60% 2 %  verd Spring dis 60% 6 0 %	Transom Litters. Wollensak's Patent from R Rether's Bronzea from Ro Rether's Real Bronze or
Soldering   Froms.   Glas 00% C10	1887 Excelsior Shaw's Payson's Universal Crown and Star Traps. Game
sarns dis 30&10 \$ \$poke Trimmers	Newhouse Onetda Pattern Game, Blake's Patent Mouse and Rat— Mouse, Wood, Choker
Spoons and Forks   1008   10	Mouse, Catch 'emalive, Mouse, "Bonanza" Mouse, Delusion Rat, "Decoy"
ver-Flated—         dls 50&5 \$           dertden Hrlt, Co., Bogers         dls 50&5 \$           1. Houers & Bros         50&5 \$           Ougers & Bros         50&5 \$           Steed & Barton         6           Vm. Rogers & flg. Co.         dls 50&10 \$         60 \$           Smrson, Hall, Miller & Co.         dls 50&10 \$         60 \$         60 \$           folmes, Booth & Haydens         dls 50&10 \$         6	Trowels Lothrop's Brick and Plaste Reed's Brick and Plaster Disston's Brick and Plaster Peace's Plastering. Clement & Maynard's
ckel Silver dis 50&5@50&10&5 % cash ttannia dis 90&10 % o % o % o % o % o % o % o % o % o %	Rose's trick Brade's Brick and Plaste Garden. Triers.—Butter and Ch Trucks, Warehouse, Penfield Block Co,'s list, it
Uptic. Concord. Platform and Haif Scroll.  187's Bolster Springs discox10 @ 60x10x10 4  40x75x  40x75x  10x10x	No. 9, Flax Twine, 4 and No. 12, "
Surress	Twine.  No. 9, Flax Twine, '4 and No. 12, '5 and No. 18, '5 4 and No. 19, '5 4 and No. 24, '6 4 and No. 26, '6 4 and Chaik Line, Cotton, '8, '8 and No. 27, '7 and No. 27, '8 and '8
icksmith's, Waterford Goodsdis 40 @ 40&5 \$ eksmith's, Butterfield'sdis to g distant for the second control of the second	Vives. Solid Box.
## Ann. 1, 3\$ Ann. Si\$ Blips No. 1, 5\$ and 3 and 3 and 5 and	Fisher & Norris Double S Stephens' Parker's Wilson's
shita Siips, No. 1.	Honney's.  Millers Falls. Trenton. Merriu's. Sargent's. Backes and Union Double Screw Lew Prentiss.
ge suberior Sitts, Chase.  # 5. 3168726 peca Stone, Red Paper Hrand. # 5. 18 62 206 peca Stone, High Rounds, # 5	Simpson's Adjustable Sam Filers— Bonney's, Nos. 2 & 3
Service   Polish	Hopkins' Reading Wentworth Combination Hand Vise Cowell Hand Vises Bauer's Pipe Vises
on 5 (10110080) \$ 8 (101)	Reading. Wentworth. Combination Hand Vise. Cowell Hand Vises. Bauer's Pipe Vises Amateur Vises. Wagon Boxes Per lb. Washer Cutters. Smith's Patent. Johnson's. Penny's
panese. *** *******************************	Steel
walde.  Brads. & Brads. & C. List. Sept. 1. 1882. and supplement. Jan. 1. 1886. serican fron Tacks. Carper . dbs 76 stell Carpet Tacks. Carper . dbs 76 stell Carpet Tacks dls 76 stedes fron Carpet Tacks dls 76 stedes fron Carpet Tacks dls 70 stedes fron Tacks dls 60 stedes for perfect fron Stedes fron Tacks	Hill's
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10	Annealed Fence. Nos. 8 a Annealed Grape. Nos. 10 Brass and Copper. list, Jan Barb Fence.
fure-frame Points   dis 50 state-red Carpet Tacks   dis 30 state-red Carpet Tacks   dis 30 state Tacks   dis 50	Wire on Spools Malin's Spid. Wire. 1 %, % Cast Steel Wire. Stube' Steel Wire. Steel Mire. Steel Mire. Steel Mire. Nos. 12 t Picture Wire. Barb A'ire Safety Guards. Wire Clothes Lines. See !
### ### ### #### #### #### #### #######	Wire Clothes Lines, See I Wire Cloth, green, dr No. 34 Wire \$1.90; No. 33 Vire Goods.—See Brit Wire Rope.—List May Wrenches.—American Baxter's Adjustable "85". Baxter's Diagonal
utile-pointed Tacks	Coes' Mechanics''
mmon and thing dis 20210 s  * Tap Borers dis 33% to 5  terprise Mfg. Co. dis 20210 of 30 s  tris s. dis 20210 of 30 s  tris s. dis 20210 s  ting dis 20510 s  that dis 25 s  the rangmeters. Tin Case dis 50 s  8 s0 s 80210 s  the rangmeters. Tin Case dis 50 s  the rangmeters. The Case dis 50 s  the rangmeters dis 50 s  th	Girard Standard. Girard Agricultural Lamson & Sessions' Engin Lamson & Sessions' Stande Lamson & Sessions' Agricul Sterling Wrench. Wrought Bemis & Call's Patent Com Bem's & Call's Merrick's Pr Dente & Call's Riggis Pate
Fles, Bale. sel Wire, Standard list dis 50&10 g  Huners' Shears, &c., safs and Snips (P. S. & W.) dis 20 g 25 c aches—See Funches. ps, J. Mallinson & Co dis 334g  Chaware.	Bemis & Call's Cylinder or Remis & Call's No. 3 Pipe. A'ken's Pocket (Bright). The Favorite Pocket (Bright). Webster's Patent Combins Boardman's.
mped, Japanned & Pieced, list Jan. 20, 1887.  "obscce Cutters.  "list 75 & 75&10 \$  "l	Always Ready Alligator. Donohue's Engineer. Acme, Bright Acme, Nickeled Acme, Bitcycle, 4½ in Walker s. Diamond.
ison's	Diamond
100 AMERICAN GI	ANT DYN
lectro-Plating and E	lectrotyning

Transom Litters.	
Wollensak's Patent Iron Bronzed dis 50	4
Rether's Bronzen fron Rods list Jan. 1, 1987, 4to FORE	T
Remer's Real Bronze or Nickel Plate, list Jan. 1,	
Excelsion	4
Transom Litters   dis 50   Rether's Bronzed   dis 50   Rether's Bronzea Iron Rods list Jan 1, 187, dis 70   Rether's Bronzea Iron Rods list Jan 1, 187, dis 70   Rether's Real Bronze or Nickel Plate list Jan 1, 1887   dis 100   Excelsior   dis 500   100   Excelsior   dis 500   100   Shaw's   dis 500   100   Payson's Universal   dis 50   00   Crown and Star   dis 50   Transe   dis 50   d	1
Crown and Star	1
Traps. dis ho	
Game-	
Newhouse dis 35 65 40 Onetda Pattern dis 608 108 10 8 70 Game, Blake's Patent dis 408 108 10 8 108 108 108 108 108 108 108	18
Game, Blake's Patent	%
Mouse and Rat-	16
Game, Blake's Patent. dls 10x 10x 20x 3  Mouse and Rat—	2
Mouse, Round Wire & doz \$1.50, dis 10	5
Mouse, Catch 'em-slive & doz \$2.50, dis 15	2
Mouse, "Bonanza" P gross \$10 ne	75
Mouse, Delusion F gross \$18.00, dbs 15	1
ideal Fgross \$10.00, cPs 10	98
Cyclone P gross \$5.2	5
Trowels	
Truwels	8
Disston's Brick and Plastering. dis 25	4
Peace's Plastering dis 25	8
Clement & May hard'sdts 20	*
Brade's Brickdis 15 at 20	2
Worrall's Brick and Plastering	4
Garden dis 70	8
Trucks, Warehouse, &c. dis 25	8
Trucks, Warehouse, &c. Penfeld Block Co.'s list, 1882	T
Twine. No. 9, Flax Twine, 4 and 4 h Balls 226 206	
Twine.  Twine.  10. H. Har Twine, 4 and 4 h Halls. 22 g 30g No. 12, 4 and 4 2 2 2 30g 28g No. 16, 4 and 4 18 4 2 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
No. 12, "	
No. 24, and 41810# 27#	
No. 204, Mattrass, Wand la "	
No. 18, " 4 and 4 " Istig 236" No. 24, " 4 and 4 " Istig 236" No. 36, " 4 and 4 " Istig 276" No. 36, " 4 and 4 " 176" 286 Chalk Line, Cotton. 4 and 4 " 176" 286 Chalk Line, Cotton. 4 balls. " 27 Mason Line. Line. Line. 5	10
Mason Line, Linen, &	10
S.Ply Hemp, 1 % Balls (Spring Twine)	
3-Ply Hemp, 1% & Balls	10
Cotton Wrapping, 5 Balls to B	10
Wool Wool	d
Paper	0
Chalk Line, Cotton, § B. Balls.  22 Mason Line, Lineb, § 3-2-Ply Hemp, is and is B. Balls (Spring Twine).  3-Ply Hemp, is B. Balls.  3-Ply Hemp, is Balls.  3-Ply Hemp, is B. Balls.  3-Ply Hemp, is B. Balls.  3-Ply Hemp, is Balls.  3-Ply Hemp, is B. Balls.  3-Ply Hemp, is B. Bal	0
V Salid Day	~
V Solid Box dis 50&10&1 @ 60	K
Paraule	8
Stephens' dis 25	8
Wilson's	%
Howard'sd's 40	4
Bonney'sdfs 40	ŝ
Millers Falls dis 40 @ 40 & 10	2
Merriti's dis 156290	*
Sargent'sdis 60x10x10	\$
Backus and Uniond's 40	.0
Prentise die 20th a 25	3
Simpson's Adjustabledis 40	8
Sair Filers	
Honney's, Nos. 2 & 3 # doz \$15.00 dis 40	4
Stearn's Silent Saw Vises	8
Sargent'sdis 60&10&10	8
Hopkins' # dos \$17.50, dis 10	8
Wentworthdis 20&10	T
Combination Hand Vise P gro, \$42,9	RF
Banor's Pine Visos	4
Date street street	
Amateur Vises	10
Bonnev's, Nos. 2 & 3.   P dos \$15,00 dis to Stearn's die still Saw Vises   dis 335,810 dis 535,810 dis 55,821 ent's   dis 408,108,10 dis 508,10 dis 508,10 dis 508,10 dis 508,10 dis 575,841 dis 575	NO.
Wagon Boxes Per lb	
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Amateur vises.	6 4 4
Per lb.  Washer Cutters.  8m(th's Patent.  # dos \$12,00, dis 25k(2) to dos \$1,00, dis 25k  Johnson's.  # dos \$10,10, dis 25k  Penny's.  # dos Pol. \$14: Jap'd. \$16. dis 55	P
Per lb.  Washer Cutters.  8m(th's Patent.  # dos \$12,00, dis 25k(2) to dos \$1,00, dis 25k  Johnson's.  # dos \$10,10, dis 25k  Penny's.  # dos Pol. \$14: Jap'd. \$16. dis 55	
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# IAMO S100

lectro-Plating and Electrotyping Machines

IN ALL SIZES, FROM \$100 UPWARDS.



CHEAPEST AND BEST IN THE MARKET.

Headquarters for everything In the Plating and Polishing Line.

NICKEL PLATING AND

POLISHING MATERIALS.

ZUCKER & LEVETT CHEMICAL CO.,

SOLE MANUFACTURERS AND PATENTEES,

WORKS: 538 to 564 W Sixteenth St, OFFICE: 36 to 40 Eleventh Ave., New York, U.S. A

# Trade Report.

#### General Hardware.

There has been perhaps a slight increase in the volume of general business, and a good many assorted orders are coming in, making a fair aggregate, and indicating a satisfactory condition of trade. The large buyers are showing a disposition to dispose of their present supply before placing orders for future requirements, and manufacturers in some lines refer to the consequently modis not characterized by as strong a tone as a maintained with regularity, but in others slight concessions are obtainable.

BARB WIRE.

The market is dull, and shows a weakening tendency. We quote Four-Point Galvanized Barb Wire  $4\frac{1}{4}$  ¢ @  $4\frac{3}{2}$ ¢ in carload

Dispatches to the daily press give the following account of the failure of Schnabel & Co., of Deering Station, Ill., and Sherman & Marsh, of Grand Crossing, Ill., for an aggregate of \$755,000:

The members of the former firm are Herman E. Schnabel and Eben J. Marsh as special partner, and of the latter firm Gen. Francis T. Sherman and Eben J. Marsh, his son-in-law. In both firms Noble P. Judah, a lawyer, was made assignee. Schnabel & Co. employed 50 men, and have been in existence about nine years, while Sherman & Marsh bave been in business about seven years, employing 80 men.

The immediate cause of the failure was the maturity of \$10,000 worth of notes payable by Sherman & Marsh. The firm were disappointed in remittances, and therefore were unable to meet their obligation. As each firm were on the other's paper, the fall of one pulled down both. The works of both firms were running up to Saturday night, when they closed down on account of the scarcity of orders.

The schedules of assets and liabilities filed in the County Court make the following showing. In the failure of Sherman & Marsh the principal creditors are:

Washburn & Moen Mfg. Company	\$24,000
Commercial National Bank	30,000
American Wire Company	
Merchants' Loan and Trust Company	
HP. Nail Company	
Iowa Barb Wire Company	
New Haven Wire Company	12.000
Stewart & Co	27,000
John A. Roebling's Son's Company	
Cambria Iron Company	14,000
Schnabel & Co	28,258
The Isma Best Wise Company and	

by 14 warehouse receipts issued by O. F. Gibbs & Son; the Commercial National Bank is secured by 30 warehouse receipts issued by O. F. Gibbs & Son, five by Hiram Sibley & Co., and nine by the Chicago Dock Company; the Merchants' Loan and Trust Company are secured by 20 warehouse receipts issued by the Chicago Dock Com-pany and 14 issue. by Hiram Sibley & Co. The open accounts are: Washburn & Moen Mfg. Company, \$11.416; Hartman Steel Company, Limited, \$3960; John A. Roeb ling's Sons & Co, \$13,515; Kubler & Beck, \$515. The total liabilities are \$448,880. The contingent liabilities of Mr. Marsh show that he is indorser on Schnabel & Co.'s paper for \$41,764, and is indorser of notes of Schnabel & Co. in favor of the Oliver & Roberts Wire Company, and guarantor on the contract of the Cambria Iron Company, amounting to \$47,280. The assets are \$256, 070. E. J. Marsh's personal assets are \$15,726 and F. T. Sherman's personal assets \$17,393, making the total assets \$289,189, liabilities over assets of \$159,691.

The list of firm assets show that they are the owners of real estate at Grand Crossing worth \$8000, real estate in Iowa, \$7303; merchandise on hand, \$193,562; office tures, \$559; open accounts, \$40,122; notes. \$700; cash in bank, \$576; cash in office

In the Schnabel & Co. failure the princi pal creditors are Sherman & Marsh (\$41,764) and the American Wire Company, the Oliver & Roberts Wire Company, the Hart man Steel Company, the Cambria Iron Company, J. Wool Griswold, the Merchants' Nathe New Haven Wire Company, and Stewart & Company. The amount due the Mer-chants' National Bank is \$40,000, secured by 45 warehouse receipts issued by the Chicago Dock Company; the amount due the Com mercial National Bank is \$15,000, secured by 16 warehouse receipts issued by Hiram Sib ley & Company, and three by the Chicago Dock Company. The open accounts are: The New Haven Wire Company, \$1255; the John A. Roebling's Son's Company, \$28,866 Sherman & Marsh, \$12.908—making the -making the total liabilities over assets, \$120,009.

The market has been quiet, without any heavy sales. The bulk of the Nails pressing for resale by second hands is now more strongly held, but there have still been some low offerings by representatives of smaller mills, and by brokers. The leading representatives of larger concerns decline to meet these exceptional figures, and the market is generally considered to be in a position where a stronger tone may quickly develop. Standard Nails are quoted \$2.15 @ \$2 25 from store, with but little abatement from the lower figure for round lots.

Messrs. Morris, Wheeler & Co. have removed to a more commodious warehouse at 28 Reade street, where they will carry in stock full lines of Iron and Steel Cut Nails and Spikes, Galvanized and Tinned Nails. Chisel Pointed Nails and Wire Nails.

Our Pittsburgh correspondent sends us the following dispatch: "The regular monthly meeting of the Western Nail Association was held at Pittsburgh, Pa., to-day. There When of Galvanized iron, \$2.50 per square extra.

was a very fair attendance. The present card rate of \$2.25, less 10 cents per keg in carload lots, and 2 per cent. off for cash, was reaffirmed. The next meeting of the association will be held in Wheeling, on June 8.

MISCELLANEOUS PRICES.

In consequence of recent advances in Iron, John Chatillon & Sons, 89, 91 and 93 Cliff street, New York, announce that they are compelled to advance their prices on Scale Beams. Their discount hereafter on No. 1 Scale Beams will be 40 per cent., and on No. 2 Scale Beams, 50 per cent.

The following are the list prices of the erate demand for goods. While the market Galvanized-Iron Sprinkling Pot manufactured by Whiting & Co., 468 and 470 Cherry short time ago, prices in most lines are street, New York, and described among the articles on page 27. The list as given is subject to a discount of 50 per cent. to the retail trade :

																									ŀ	'er d	loz
- 6	quart			٠		٠		,	,	 		۰	٠	0				٠	٠	a	٠	٠				. \$1:	2.0
- (2)	CHIBLITE.																									1.5	a u
10	quart													0												. 18	8.0
12	quart quart.																									. 2	1.0
16	quart.														٠					0		٠	٠	0		. 2	4.0

There are not many indications of any material additions to the line of Apple Parers which will be put on the market the present season. The Goodell Company, Antrim, N. H., are, however, preparing a new family Apple Parer, which will be called the Pomona. It is described as a small machine, and will sell to the retail trade for from \$4 to \$5. It is expected that it will be ready for this searon's trade, but samples or circulars are not yet issued.

Stearns's Silent Saw Vises, manufactured by E. C. Stearns & Co., Syracuse, N. Y., and described among the novelties on page 27, are sold at the following prices, which are subject to a discount of 35 per cent .:

No. 10, Japanned, 10 inch, Planed Jaws..... No. 38, Japanned, 10 inch, Planed Jaws.....

The Axe market presents no specially new features, but is generally regarded as in a slightly better condition than when the break in prices first occurred. Several of the leading manufacturers have reached an agreement fixing a limit beyond which they will not sell the goods.

The manufacturers of Augers and Bits have recently been conferring at New Haven with reference to the irregular prices which have for some time prevailed. It is understood that the conference was one of manufacturers alone, in which their agents were not represented, and one of the objects desired to be secured is said to have been the reaching of some determination by which the market may be protected from irregular prices made by agents. There will be in this city to-morrow a meeting of the association, in which action may be taken in the matter. The feeling of the manufacturers was in favor of slightly higher prices, and it is hoped that it may be feasible to establish them. With the feeling that exists in certain quarters, it is not improbable that lower prices will prevail unless the irregularities that have heretofore existed are corrected.

The market for Steel and Iron Squares has been gradually strengthening, owing to the somewhat higher prices quoted by the manufacturers, and an increased disposition on the part of jobbers to hold their stocks more firmly. The quotations of the manu facturers are 75 per cent, discount in small lots or 75 and 10 per cent. discount in case lots, the latter figure being, however, freely given by leading jobbers without regard to quantity

Hobart B. Ives & Co., New Haven, Conn., issue a circular relating to their line of Door Bolts of which the different patterns are illustrated. The fact that they manufacture these goods in over 40 styles of finish is alluded to. They also issue a price list in simi lar form of Ives' Patent Sash Locks, with illustrations and list prices. They allude to tional Bank, the Commercial National Bank, the special features of these Locks as being that they are securely locked when closed, the meeting rails being simultaneously drawn together. These movements, it will be remembered, are accomplished by cams with out the instrumentality of springs, thus avoiding the liability of getting out of order. The goods are made under patents dated April 17, 1883, October 16, 1883, December 30, 1884, March 24, 1885, May 12, 1885, June 23,1885. The goods were patented in Canada March 24, 1886. A new pattern has recently been added which is designated as Bell Tip Plain The list on these goods is as follo

Per I	ozen.
No. 431, Plain Iron, Bronzed	\$1.40
No. 43. Plain Iron, Coppered, Gold laquered. No. 433, Plain Iron, Bronzed, with Bronze	1.75
Metal Knob, No. 1 finish No. 484, Plain Real Bronze Metal, polished,	2.50
No. 1 finish. No. 435, Piain Real Brass Metal, polished,	
No. 1 finish	7.50
No. 2 finish	7.50
plated	9.00

The Cincinnati Corrugating Company, Cin innati, Ohio, manufacturers of Roofing, Siding, Ceiling Arches, Lathing, &c., issue the following price list. The prices given are per square, or a 100 square feet of Iron, measured according to the rules adopted by the Na

tional from a soung association :	
Roll and Cap Roofing, painted rad	
painted red Packed Standing-Seam Roofing, corrugated,	
	4.95
V-Crimped Roofing, painted red	3.75

Corrugated Iron for Roofing, Siding, &c., 216-Inch Wide Corrugations. Corrugated Lengthwise.

E 2 5 No. 26 No. 24 No. 22 No. 20 No. 18 

For Cross Corrugated Iron add 5 per cent. per prices above are for regular lengths and

ouns, Nails and extra paint, dry, are 10 cents per square tra on painted; Nails for Galvanized Iron, 15 ents.

Bound Ridge Cap, Fig. 4, per lineal foot, 12 ents, painted; 20 cents; galvanized; sold in 6-fee.

Angle Ridge Cap, Fig. 14, per lineal foot, 10 ents., painted; 18 cents, galvanized; sold in 6-feet Hip Cap, 4 cents per foot less than Ridge Cap, s per above.

as per above.
Wooden Ridge Joint, Fig. 5 (order twice the length of your Ridge), 4 cents per lineal foot (for 2\(\frac{1}{2}\)-inch Corrugation only).
Curving Sheets, Fig. 6, per square, 50 cents.
Cutting Gables or Angles, Fig. 22, per square, 50

cents.

Metallic Lath, Fig. 26, 1½ inches by 3½ inch Corrugations, per square foot, 3½ cents, perforated, of regular lengths.

Metallic Cement, in barrel lots, 4½ cents; in less than barrel lots, 5½ cents per pound.

The price of the cheaper Wrench made by the Ellrich Hardware Mfg. Company, Plantsville, Conn., for whom the Alford & Berkele Company are special agents, 77 Chambers street, New York, is \$15 per gross, subject to a discount of 20 per cent, instead of 25 per cent., as recently announced.

The Mallory-Wheeler Company, New Haven, Conn., and 64 Reade street, New York, issue a circular, under date May 4, in which Padlocks and Padlock Keys are quoted at discount 66% and 10 per cent. It is also stated that to parties purchasing 50 dozen Padlocks at one time, a quantity discount of per cent. will be allowed and continued on their further purchases for any quantity during the season ending December 31, 1887. The discount on all goods in their list except Padlocks and Padlock Keys is mentioned as 50 and 10 per cent.

Woodrough & McParlin, Cincinnati, Ohio, ssue a circular describing some comparatively recent additions to their line, including Hand, Panel and Rip Saws, No. 60, 50 and 40, Hollow Back; also Buck Saws, No. 350, and Beef Splitters. On cards they also illustrate their Steel Back Cincinnati Butcher Saws, No. 7, the Leader Hand Saw, No. 100, and the Cincinnati Plastering Trowel. Their discount sheet applying to their list September, 1884, is as follows: Terms 60 days or 2 per cent. discount for cash in to days from date of invoice.

		Per cent
8	Circular Saws to 46 in	
8	Circular Saws over 46 in	5
	Shingle Saws	5
t	Veneering Saws	
1	Concave Saws	
ı	Grooving Saws	
	Edger Saws	50
	Repairing	40
r	Mandrels	46
à	Upsets	38
	Gauges	28
	Saw Seta	40
	Saw Sets	
	Mixter Gummers	30
	Mixter Cutters	10
1	Stone's Gummers and Cutters	40
	Emery Wheels	85
1	Dole's Patent Wheels	16
Ц	Dole's Gummers	10
ı	Dole's Gummers Planing Knives and Molding Cutters	10
1	Band Saws	
1	Inclusive	45
П	Hand Ice Saws	55
١	Hand Ice Saws Regular Cross-cut Saws (except Diamo	nd and
1	One-man Cross-cut Saws)	40
1	Diamond Cross-cut Saws	50
1	One-man Cross-cut Saws	40
П	Hand Saws	35
1	Hack Saws	
1	Compass and Pad Saws	25
I	Pruning and Back Saws. Brick and Plastering Trowels	85
1	Brick and Plastering Trowels	
-1	Billet Webs	25
ı	Framed Wood saws	
1	Saw Bucks	10
1	Saw Rods and Frames	25
1	Inclusive	25
ı	Slaw and Kraut Cutters	40
1	Cane Knives	25
ı	Bevels and Try Squares	60
1	Miter Squares	

We are advised, owing to recent improve-Smith, Delaware, Ohio, of which a description was given in our last issue, that its price has been advanced to \$10, crated.

There are some irregularities in the figures at which Standard Wire Nails are sold, and prices are frequently made considerably below the card rate.

The Phosphar Bronze Smelting Company, 512 Arch street, Philadelphia, announce that their new foundry is now in successful operation, and fully equipped for the production of all kinds of phosphor-bronze castings, in green and dry sand or loam. The company make a specialty of car and locomotive bearings, heavy gearing, hydraulic marine, rolling mill, mining and engine castings. For ordinary machine castings they quote net cash prices as follows, castings delivered f. o.b., Philadelphia:

lity. Application.
Very Tough. Application.
For general Machine Casting; Pinions,
Cog Wheels, Propeller Screws. Hydraulic Press and Fump Barrels, Piston
Rods, Screw Bolts for Steam Cylinders
and Hardware.—Very tough and hard,
and specially recommended to resist Application. and specially recommended to resist crystallization and corrosion. For Bearings of Heated Rolls, Vaives, &c.—Very hard. For Bells, Steam Whistles, &c.—Harder and stronger than ordinary Rell Metal For Rods and Bolts.—Subjected to rapid or jagring motion. 27 € or Jarring motion.

Bearing Metal for all bearings of Locomotive, Marine and Stationary Engines, Passenger, Freight and Street Cars, Koli Neck Bearings, Thrust Rings, Side Valves, Trosshead Gibs, Piston Rings, &c.—Very hard and durable, and not liable to heat or cut the journal 26 4

The price of the Hurd Patent Respirator, manufactured by the Morley Respirator Company, East Saginaw, Mich., and described on page 27, is \$24 per dozen, subject to a discount of 10 per cent.

The Chicago Hardware jobbers report their trade in danger of serious curtailment in consequence of the new freight rates adopted by the railroad companies under the provisions of the Interstate Commerce act. This applies not only to trade with the far West, which might naturally be regarded as contingent business, but also to trade with nearer localities, such as Mississippi puriess. River points and those sections in the Northwest which can be reached by lake, or lake and rail, from the East. Goods can now be shipped from Buffalo to Duluth, and thence the St. Paul and Duluth Railroad St. Paul and Minneapolis at rates equal to those charged by the railroads running from Chicago to St. Paul, thus reducing the cost by the lake route almost the entire rate from New York to Chicago. The competition on Mississippi River business is in favor of St. Louis jobbers. The diversion of business has already been felt by Chicago jobbers, and they have appealed to the Interstate Commissioners for relief. If trade is permitted to settle in the new channels now being marked out, the probabilities are against its recovery by Chicago unless railroad rates should again be reduced to former figures and kept down permanently. At present the situation strongly favors the establishment of a large jobbing trade at St. Paul and Minneapolis through the railroad interpretation of the Interstate Commerce act.

The following circular in regard to freight has been issued, under date May 3, and will be of some general interest, as showing the method adopted by the manufacturers :

With a view of equalizing the matter o freight delivery, it has been determined that on and after this date the lowest freight rate obtainable by purchasers from any one of the manufacturers whose names are hereto attached, shall be regarded as the basis of freight to be paid by purchsers, and any freight above such sum will be allowed by any of the undersigned manufacturers.

P. HAYDEN SADDLERY HARDWARE COM PANY, Columbus, Ohio,
North & Judd Mfg. Company, New

Britain, Conn. O. B. North & Co., New Haven, Conn FRAZER & JONES COMPANY, Syracuse, N. Y. H. W. MINNEMEYER & Co., Pittsburgh. P. Wilson's Sons & Company, Cincin-

natti, Ogio. ELBEL & Co., Canton, Ohio.
THOMAS DEVLIN & Co., Philadelphia. Pa. PRATT & LETCHWORTH, Buffalo, N. Y.

The Penn Hardware Company, Reading, Pa., are putting in a new plant for electroplating both brass and bronze, and are intending to make a specialty of such work. Their line of Builders' Hardware has recently been much enlarged and they are now offering an extensive assortment. Sise, Gibson & Co., 100 Chambers street, New stock.

The Secretary of the Treasury has decided that on the exportation of Sad Irons of the size designated by No. 31/2, weighing not less than 63 pounds to the dozen, which are manufactured wholly from imported Iron, a drawback will be allowed at the rate of 25 cents per dozen, less the legal retention of to per cent.

The Southwark Scale Company, Philadelphia, in our last issue, advertised a special offer on a lot of Fancy Painted Counter Scales. Through some misunderstanding the electro of their IXL Combination Counter Scale appeared in the advertisement, and they advise us that they will fully explain the conditions of their offer to the trade in our next issue.

The New York office of Miller Bros. Cutlery Company, Meriden, Conn., has been removed from 62 Reade street to 79 Chambers street.

The Goodell Company, Antrim. N. have issued their catalogue for the present year. Their line of Apple, Peach and other Parers occupies the greater portion of the pamphlet. Their White Mountain Hammock Chair and Stand are also illustrated. In addition to the foregoing, descriptions are given of Pierce's Improved Cahoon Broadcast Hand Seed Sower, the Granger, and Philadelphia Broadcast Hand Seed Sow ers, and the Keystone Green Corn Cutter.

Announcement is made, under date of April 30, that the partnership heretofore existing between Chas. H. Amidon and Ansley D. White, of Buffalo, N. Y., under the firm name of Amidon & White, was dissolved by mutual consent, on the 21st day of April, 1887, and that Walter S. Bastedo having purchased of Ansley D. White his interest in the business and property of the late firm, the business will hereafter be Main street, by Charles H. Amidon and Walter S. Bastedo, under the firm name of The affairs of the late Amidon & Bastedo. firm will be settled by Amidon & Bastedo, who alone are authorized to sign the firm name of Amidon & White in liquidation.

The following changes have been made in the management of the Union Hardware Company, Torrington, Conn.: Duncan K. Major, for the past three years treasurer and general manager, has resigned, and will some manufacturers, has opened a house at be succeeded by C. F. Fernald, late of Chicago, as manager, and M. B. Dunbar as treasurer.

H. M. Gay, who is widely known, having been on the road selling Hardware for the last 20 years, the last 12 of which as representative of the Biddle Hardware Company, Philadelphia, his field being especially Wis consin, Illinois, Iowa and Minnesota, has gone into business in Milwaukee in partner ship with his brother, George S. Gay. The firm name is H. M. Gay & Brother, and their business designated as wholesale Hard ware specialties. They advise us that they have put in a stock including the leading lines of Shelf Hardware, Cutlery, &c H. M. Gay, in connection with this new de parture, will continue to represent the Bid dle Hardware Company, and will travel over his old route as heretofore. He will also represent a few manufacturing con cerns, including C. E. Jennings & Co., executing small orders from their Milwaukee stock, and shipping la ger lots direct from factory.

E. C. Stearns & Co., Syracuse, N. Y ssue a sheet for insertion in their catalogue, which gives illustrations of some of the recent additions to their line. It includes Tackle or Awning Pulleys, Side Pulleys, Increased Polleys Clothes Line and Screw Pulleys and Stearns Silent Saw Vises.

L. W. Ferdinand & Co., Boston, Mass. to whose line of Heavy and Ship Chandlery Hardware and their catalogue relating thereto we referred in our last issue, are agents also for the Shelton Brass Hardware Company. In addition to the lines above referred to, the catalogue covers Brass and Nickle Plated Refrigerator and Ice House Hinges, Wire Rope, Chains, Canoe Fittings and other specialties.

Henry Schade, 56 and 58 Ainslie street, Brooklyn, E. D., N. Y., in a circular, May 2, 1887, states that, having found it desir able to give up his New York salesroom, he will in future devote his whole attention to the factory. He alludes to having had over 25 years' experience in this line, and expresses hopes that his assuming charge of the manufacturing department will be shown in the increased beauty of his ware and the promptness and dispatch with which orders will be filled.

The Fred. J. Myers Mfg. Company, Covington, Ky., issue an attractive series of colored lithographs, which are used to call attention to the Hunter Sifter, of which they are manufacturers.

At a late meeting of the directors of the Barnes Mfg. Company, New Haven, Conn... Horace F. Sise was elected secretary and treasurer in place of the late John H. Barnes. The operations of the company will continue as before, their New York office being with Sise, Gibson & Co., 100 Chambers street.

The Collector of Customs at New York has written a letter to the Treasury Department in regard to various cases of imported merchandise wherein the department re-York, are their agents, and carry a full fused to permit entry on second invoices exhibiting a less value than the invoices first received. The Collector says that in cases where there are two invoices giving different values for the same importation, the entry, as a rule, must be made by a higher one, and that the establishment of a precedent for any other rule would lead to practices dangerous to the revenue. Assistant Secretary Maynard has notified him that his onclusions are approved by the department.

The Newhall Ship Chandlery Company, Henry B. Newhall Company, general agents, 105 Chambers street, New York, issue a neat and compact price list of the line of Hardware and Ship Chandlery Hardware which they are putting on the market. It also contains a list of the manufacturers for whom the Henry B. Newhall Company are general agents, among whom are many oncerns of recognized prominence.

The George D. Winchell Mfg. Company, Cincinnati, Ohio, have recently issued a new catalogue of their goods, which are attractively represented with good illustra tions on excellent paper. It covers their well-known line of Imperial Water Coolers, Japanned Ware, Coal Vases and Hods, Grocers' Supplies and Oil Tanks, Plain and Pieced Tinware, Deep Stamped Ware. Spoons, Common and Shallow Stamped Ware and miscellane us goods. The trademark which the company have adopted is prominently represented.

The Gilbert & Bennett Mfg. Company, 228 Lake and 18 and 20 Franklin streets, Chicago, Ill., have recently issued catalogue No. 100, in which they illustrate and describe their extensive line of Wire goods. It is divided into several departments, of which department No. 1 relates to Galvanized Netting, Fencing, Gates and Tools, department No. 2 to Wire Cloth, department No. 3 to Wire Goods, including a large variety of specialties, department No. 4 being devoted ontinued at the former location, No. 135 to Foundry and Coalyard Supplies. Screen Windows and Doors, Corners, Frames, &c., are also represented. In their introductory address to the trade the company aslude to the special features of their goods, with a special reference to the finish or covering used to protect the Iron or Steel from atmospheric influences, referring in this connection to their Pure Zinc Finish.

Robert T. Ladd, who is known to the trade for several years as traveler for 46 Beekman street, New York, where, as Hardware manufacturers' agent, he is representing some well-known houses. We are

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advised by Job T. Pugh, manufacturer of tations, and even curriers get the same price lists as the ironmonger, and actually philadelphia, that he has appointed Mr. Ladd Philadelphia, that he has appointed Mr. Ladd his agent in this city. Among the other lades as I could enumerate other trades, and actually with water from a cistern in the second story, which in turn is filled from the roof, and has an automatic overflow. The pipe ports from Pennsylvania are that Iron houses represented are George W. Pierce, Cleveland Machine Company, and Lovell, Tracy & Co.

Luther Boardman & Son, East Haddam, Conn., issue a new and tasty catalogue and price list of the Nickel, Silver and Brittania Spoons, and Electro Silver Plated goods of which they are manufacturers. The pamphlet is fully illustrated, and the convenience of the trade is served by having it indexed through, so that any desired line of goods is very readily found. The special features of their line are referred to in the introductory circular to the trade, in which the quality of their ware, their method of Luther Boardman & Son, East Haddam, putting up the goods, and other matters are

with S. D. Kimbark, but the address of the company will hereafter be at Boston as

The Francis Axe Company, Buffalo, N. Y. have recently issued a circular calling special attention to their All Steel All-Polished Axes, while alluding also to their other goods. It gives an order blank which will be found convenient, and testimonials in regard to the quality of their Axes. The circular also represents their Axe Bit Stone and the Francis Axe Wedge, and calls attentially as a proper successful to the proper successful the profits tells considerably on a business. In have ceased to complain of manufacturers and merchants in the Ironmongery trade, and the Francis Axe Wedge, and calls attentially as a profit of the property of the property of the profits tells considerably on a business. In the profits tells considerably on a business and the profits tells considerably on t tion to their Axes put up separately in paper

The United Brass C mpany, 79 Fulton street, New York, with works at Lorain, THE ARRANGEMENT OF HARDWARE STORES. Ohio, and Haydenville, Mass., send us their hardware catalogue for 1887 representing their line with the additions which have been made to it since the last catalogue was issued. It is a cloth-bound pamphlet of some hundred pages. The first 75 pages or so contain illustrations, with accompanying price lists, of numerous varieties of brass cocks. Following these, a line of hose fittings is taken up, after which a number of small Brass Cocks and Valves are noted. The catalogue closes with reference to some of the styles of Craigie's Waterclosets. The catalogue is fully illustrated and well printed.

On the first of the month, Jacob Brombacher's Sons, with office at 20 Cliff street, issued a circular, in substance, that a cor-poration had been formed under the State law, known as "Jacob Brombacher's Sons." This company have purchased, by and with the unanimous desire and consent of all the next of kin, heirs at law and legatees under the will of the late Charles Brombacher, the entire stock of manufactured goods, and all the real estate, machinery, tools, patterns, patents and privileges belonging to and used by the late Charles Brombacher in the manufacture of tinsmiths' tools and machines, paper-box machinery &c., for the purpose of continuing their manufacture. The circular recites that the business was established in having been turned on the sheet iron and having slots so as to tighten the chain. All the bottom slid in from the top and nailed, the ends have gudgeons to prevent friction continuing their manufacture. The circular the late Charles Brombacher, and also of A.

F. and M. H. C. Brombacher, who control and will manage the new concern at the old stand. The circular concludes with the request addressed to the trade at large for a constant. In filling them I empty quest addressed to the trade at large for a continuance of the old patronage which has been bestowed, for upward of 50 years past, upon the line of goods named. The statement is also made that the tools and machines put out by the company will continue to be made by the same skilled labor which was employed by the late Charles Brombacher, and the quality of goods will not only be fully sustained, but, if possible, made to surpass the excellence of the Brombacher goods of the past. that the company are now in position to fill orders promptly.

#### TRADE IN ENGLAND.

The manner in which Hardware merchants are interfered with in their trade by the sale of Hardware by merchants in other lines, and by the manufacturers direct to the consumers, is the source of frequent practices are not in this country carried to fingers. nearly the extent that they are in England. As bearing upon this point we make the following extract from a letter of an English ironmonger, which appeared in a recent issue of our London contemporary :

I have read many letters on this point and it has occurred to me that the whole correspondence and a thousand more letters will not alter circumstances. I have now had 18 years of business experience, and I must certainly admit that I never found competition so keen as now; but what is to prevent it? The Ironmongers' Association will not stop it, and nowadays every man has to use all the energy be has if he wants to make a living out of mere buying and selling. In the town in which I live, with a population of about 7000, and a few villages round, making another 1500, the ironmongery trade is represented by four fronm ingers, with stocks worth over £1500. two with stocks worth over £200, besides three tinmen and three plumbers, all of woom can buy direct from manufacturers, and also manage to sell in competition

tations, and even curriers get the same price lists as the ironmonger, and actually make a trade in some cases with Horsenails. I dare say I could enumerate other trades, but, seeing all this, what is the use of so much grumbling? "One of the Injured" mentions the trade in "galvanized corrugated iron." Not two months ago a firm sent me a letter received from a man in my neighborhood asking for quotations, and requesting me to see him, which I did; but did

doubt the quality.
While prices are so low we shall see no with S. D. Kimbark, but the address of the house is Goodspeed's Landing for a dozen with S. D. Kimbark, but the address of the house is Goodspeed's Landing, Conn.

White prices are so low we shall see no change. Ironmongers are obliged to reduce a man's wages; he does not like it, so leaves; and, perhaps, being a smith or tinman. starts business himself against his old employers. I have seen three instances of this kind. He gets credit and cuts trade, does himself very little good and older tradesmen harm, and very often the manufacturers or merchants find that instead of having two good accounts in a town, they have half-a dozen ont that instead of having two good accounts in a town, they have half-a dozen—some of them very risky. Seeing that all this cannot be prevented, I should like to know if any of vour readers have tested the "ready-money" principle, and so keep no books. Grocers and drapers find it answers, but I do not know any of my trade who have tried it in small towns. Every one knows long credit does not pay, and even with short credit we meet with for I see in other towns that even Iron-mongers sell furniture, linoleum, rugs, china, glass, &c.—so that every trade is tarred with the same brush.

From Orton O. Lame, Canisteo, N. Y., we have the following communication relating to this subject, in which it will be observed that he refers to some methods of more or less importance which he has found useful. They are illustrated in the accom-panying cuts, Figs. 157 to 161. After referring to the utility of the articles we have published on this subject, our correspondent

You have illustrated some good kinds of Nail bins, but I have one which excels them all, Figs. 157 and 158. Each bin is made of No. 24 sheet iron, 24 inches wide, is round, I foot in diameter, wired with ¼ inch

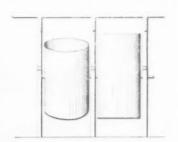


Fig. 157.—Arrangement of Nail Bins.

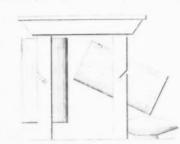


Fig. 158.—Method of Taking Nails from Bin

about one-third of the keg at a time into the Nail scoop, and then into the keg. The Nails shake out of the smooth sheet iron so easily, that the arrangement is complete These bins are clean, do not mix or spill the Nails, complaint; but it would appear that such tear the clothes, or drive splinters into the

A hinged cheap shot-can may be made by putting a spout on a 1-quart fin can, with a zinc can screw on top to fill by. To prevent



Fig. 159 .- Method of Hanging Up Measures for Varnish, &c.

running to my sink from the hot-water tank gives me an abundance of hot water, which is found very useful in a Hardware store.



Fig. 160.—Method of Operating Curtains in Front of a Shelving.

run a 2-inch conductor pipe, well soldered, through my standards back of the frieze, plugging the ends, and fastening to one end a pulley, which is connected with another pulley lower down by an endless chain, Fig 160. In Fig. 161, A is the roller, B is a piece cut out of the standard, so that you can take out the roller if necessary, and is fastened by screws C C; the frieze board is hinged at D. The shelves drop back 1 1/2 inches to allow curtain to be raised and low-ered without catching on the samples. The

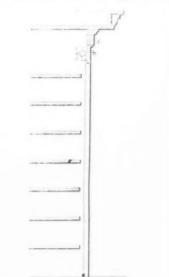


Fig. 161.—Sectional View of Shelving, with Curtain.

I open the doors for my customers when they wish to go out with their hands full, by means of short cords dropped near the counter, which are attached to a cord running from the rear of store through pul-ley along the ceiling to a pulley, say 5 fect from the front door and nearly on a line with the hinges, and thence to an eye in the upper corner of the door over the latch, where it is tied to a wire that runs to the latch. By pulling the cord you lift the latch and open the door, and when you release the cord the spring on the back of the door

I. What is the best method of marking Anvils, Crow Bars, &c.? Black paint does not show, and white or red paint would soon dry up, as there would be comparatively little use for them.

2. What is the best disposition to make with the screws belonging to bronze metal or bronzed goods which are put in the show-case! They do not look well when tied to the goods, and if left in the boxes are liable to get mislaid or lost.

#### Coal Market.

The Coal companies and individual oper ators alike have been served with a peremp tory demand from the miners in Pennsyl vania for an advance of to per cent, in wages, to take immediate effect. There is no evidence that the demand is authorized or even approved by any considerable number of men, but there is some reason to suspect that the disaffection has been exag gerated as a stimulus to buyers, and it is of the market, a miners' strike would be welcomed in some quarters as a measure of relief. However this may be, word comes that representatives of the Pennsylvania, Reading, Jersey Central, Lehigh Valley and Lehigh Navigation companies, at a meeting change, and it remains to be seen whether the control of the pennsylvania, change, and it remains to be seen whether the control of in Philadelphia decided to make no advance. with the ironmonger. Then there are a few smiths, who all get quotations from certain firms for iron and Horse nails. Wheelwrights get similar quo

ports from Pennsylvania are that Iron manufacturers have lately increased their orders for Coal as a precautionary meas-I drop a curtain over my shelf goods at night, and raise it again after I dust in the miners generally will not enter upon a remains unaltered at \$\epsilon\$. Export of Calamorning. It is arranged in this way: I struggle while the odds are so heavily against them. The accumulation at shipping points is estimated as high as 1,000,000 tons. What a general strike would mean may be judged from a few figures : In the Wyoming region there are 100 collieries employing 30, ocomen ; in the Schuylkill region, 120 collieries, 30,500 men; in the Lehigh region, 52 at 61/2¢ @ 61/4¢ for Common Domestic. collieries, 13,000 men; total, 281 collieries,

The Bituminous trade report a more active market is now quoted at \$3.50 (at delphia, \$2 70, f.o.b.

The strike of Coke workers in the Connellsville district is firmly persisted in, and Iron manufacturers in a few instances have been compelled to bank their fires. Orders in anticipation of the hot season, are falling off. At Chicago Coke is in good supply, and at St. Louis prices are unchanged.

#### Metal Market.

Copper. - There has been a little more inclination to buy Lake Ingot Copper for future delivery, while spot and prompt de-livery has been pressing for sale at 9.95% without eliciting a higher bid than 9 90¢ August, September and October delivery having been in good demand at from 10.100 to 10.20¢, according to the month. Distant Copper is inquired after and is difficult to obtain at the moment. Should, however during the next month or so the inquiry for spot not improve, we may see holders more disposed to part with their futures at more reasonable prices. Outside Copper is ex ceedingly dull at present, 9¢ being the best bid obtainable in round lots, and might be obtained at 91/8¢, both Baltimore and Orford. Chili Bars have fluctuated but little in the London market. On May 5 and 6 the quota tation was £39. 7/6 It declined on the 9th and 10th to £30. 2/6, and rose again this morning to £39 5/, while Best Selected declined from £44. 15/ to £44. 10/. Export of Pyrites from Spain during the first two months, 128,200 tons, against 98.612 in 1886 and 123,149 in 1885; of precipitate, 4914 against 4308 and 4000. Export of Ingol Copper from the United States during the first nine months of fiscal year, 12,949,758 B, against 21,149,524 in 1886.

Tin .- Tin has moved upward steadily with London. The advance during the week has been nearly £2 7 ton, London coming to-day as high as £104. 7/6 spot, and £105 for futures. Here the market has tollowed steadily, but reluctlantly. There appears to be no confidence here as yet in the present prices being maintained. The disappointments during the past 12 months have been so frequent and unexpected that very few people will persuade themselves into believing that the time has arrived for lower pulley, Fig. 160, is fastened to a board having slots so as to tighten the chain. All gardless of the low prices of all other metals. We have seen Tin in former years amounting to 30¢ and over, and remaining there for years. We have also seen it down to 13% and 13% . In looking back impartially at the reason of these great discrepancies we can easily find out what caused both the higher and the lower values named. We are now in the ascendency, and it does not look as if a reaction is to come soon unless consumption suddenly ceases or into the United States during the first nine months of fiscal year, 10,919 tons, against 0414 in 1886. Tin Plates. - There has been a fair demand in this market, with the supply slightly more liberal, but no change in prices. We quote at the close, in large lines, per box : Siemens Martin Steel, Charcoal Finish, \$4.75 @ \$5.15; Coke Finish, \$4 60; Ternes, \$4.15 @ \$4.25; Coke Tins, \$4.27 1/2 @ \$4.35. Liverpool is steady and unaltered at 12/9. Net import of Tin Plates

Lead .- The chief operator has re-commenced, it appears, to jun up the market, and various lots have been sold during the the machine. last few days at 4 45¢ and 4.47 1/2¢, the lots ranging between 32,500 th and 325,000 fb. suspect that the disaffection has been exag all the way from May to September; to-day steel of the stern post of the cruiser Balti the asking price outside of the Exchange is more, cast by the Standard Steel Casting of the market, a miners' strike would be would be obtainable of the market, a miners' strike would be for level. Lehigh Navigation companies, at a meeting change, and it remains to be seen whether bar of iron. consumers will take hold of Lead at the en In anticipation of trouble the collieries have hancement. Soft Spanish Lead in Londo :

Spelter and Zinc .- No new develop ments have occurred in the domestic market. the quotation under a moderate demand remaining 4.50¢ @ 4.60¢ for Common Do mestic as to brand, and 4.80¢, for Silesian, which in the London market has improved mine from Spain during the first two months, 3160 tons, against 3810 in 1886, and 10,049 in 1885. Net import of Spelter into the United States during the first nine months of fiscal year, 1983 tons, against 1374 in 1886. Sheet Zinc.—Sheet Zinc is still scarce, while the demand continues fair

Antimony .- The London quotation for Hallet, as cabled to the Metal Exchange, is

#### New York Metal Exchange.

The following sales are reported

the following sales are reported	
THURSDAY, May 5.	
10 tons Tin, June 25 tons Tin, selter's option, 4 mos 20 tons Tin, July 10 tons Tin, May 10 tons Tin, June 10 tons Tin, July 10 tons Tin, spot 25 tons Tin, selter 4 mos, seller's right to double.  SATURDAY, May 7.	22,70¢ 22,70¢ 22,70¢
32,500 % Spetter, May	1,521,0
MONDAY, May 9.	4,000,00
	22,80¢ 22,85¢ 9,95¢
TUESDAY, May 7	
10 tons Tm, June. 10 tons Tm, May. 10 tons Tm, June. 10 tons, Tm, May. 10 tons Tin, July. 25 tons Tin, July. 25 tons Tin, July. 25,000 Th Lake Copper. 25,000 Th Lake Copper. 32,500 Th Lead, May. 75,000 Th Lead, September.	22,95¢ 22,90¢ 10,20¢ 10,15¢

### Old Metals, Rags, &c.

The purchasing prices offered by dealers

are as follows:			
Heavy Copper₩ 15		0	50.07
Light Copper 2 b.		60	.06
Copper Bottoms # 15,		(B)	.0h
Brass, Heavy 10,		(ch	.06
Brass, Light		(a)	.04
Composition > b.		(ch	.085
Lead. Heavy Ph. 1	10.0334	(0)	.04
l'ea Lead			.0814
Zinc R D,	.03	600	.031
Wrought Iron ton.	00.35	60	29.00
Light Iron pton 1	12 (0)	62	13.00
Stove Plate Iron # \$	12,00	608	10,00
Machinery fron	5 00	CL	16,00
Grate Bars d ton.		we	7.00
Old Rubber	.05	0	0.5%
White No. 1 12 10,	, e196g.	GE,	
White No. 2 # 10,	.0156	(E)	.013
Canvas, Linen, No. 1 W D.	.0454	(10)	
Canvas, Cotton, No. 1 W 2.	.0486	60	.04%
Canvas, No. 2 th,	.0286		.02%
seconds	.01	60	.01%
toft Woolens 独 饰。	.07	GB	.07%
dixed Rags # D,	.01	0	.0114
	01 9-16	Ch	01 11-10
	01 9-16	00	.019
Book Stock 視力,	.00%	(il	,013
Newspapers % D,	.00%	@	.01
Waste Paper @ D,	.0034	(CE	.00%
Kentucky Bagging # b,	021/4	60	.021
Kentucky Bale Rope W D.	.0314	60	.04
Kentucky Bagging & D.	.0214	66	,0:308

At the annual meeting of stockholders of At the annual meeting of stockholders of the Elytonhand Company, of Birmingham, Ala., on the 5th inst., upon the recommend-ation of the president, Dr. H. M. Caldwell, \$1,000,000 were appropriated out of the surplus of the company to build a rolling mill and other manufacturing en-terprises. It is quite probable that the terprises. It is quite probable that the latter will include locomotive works. Dr. Caldwell's idea is to make the rolling mill thoroughly modern and to operate to some extent on the profit sharing system. Its direct profit cannot be any great consideration with his stockholders, seeing that they drew 700 per cent of dividends last year, amounting to \$1.400,000. The company's saies of real estate for the year footed up soon unless consumption suddenly ceases or production is unexpectedly increased. Our production is unexpectedly in May and 2314¢ asked. The import of Tin among the stockholders of the latter as dividends.

> An English firm, Messrs. Hetherington & Co., of Manchester, recently completed for the British Admiralty a specially designed twin planing machine, which is to plane 15 feet long by 12 feet 6 inches wide and 5 feet high. It is arranged to work as two independent machines, or it can be coupled up to work as one machine. There are two tables, and each half of the machine is en tirely independent, having separate driving gear and self acting and controlling motions into the United States during the first nine months of fiscal year, 171,846 tons, against 164,859 in 1886.
>
> Lead—The chief operator has re-compared with the tools distributed along the sliderest as desired, and the whole of the opera tions can be controlled from either side

> > A test was made on the 28th ult. of the

The Socie e Cockerill, of Seraing, Bel been worked lately to their full extent, until supplies of Coal have become excessive.

The total sent to market for the week is 660,850 tons, compared with 407,586 tons

Takic pation of trouble the collieries have been with supplies of Coal have become excessive. English Pig has declined £12, 10/ @ £12, 7/6.

Export of Pig Lead from Spain during the first two months 23,268 tons, against 19,701 for the Belgium steel railways, and is also making its way in other countries.

## WHOLESALE METAL PRICES, MAY 11, 1887.

#### METALS.

WON.—DUTY: Bars, 8-10¢ to 1 1-10¢ 智 散; provided that no Bar iron shall pay a less race of duty than 35%. Sheet, 11-0¢ to 15-10¢ 智 散. Band, Hoop ard Scroll, 1¢ to 14-10¢ 彰 取. Raliroad Bars weighing more than 地 数 取 智 yard, 7-10¢ of 1¢ 智 取. Standard American Pig Iron.

Coltness
Shotts
Clengarnock...
Gartsberrie
Langloan

Steel, at Eastern milis. Old Rails, Ts.... Wrought, \$ ton, from yard .... Bar Iron from Store.

Norway Rods... Copper

Sheet Iron from Store. | Columbia | R. G. | Cleaned | R. G. | R. G. | Cleaned | R. G. | R. G.

American Cold Rolled B. B... \$\mathbb{D}\$ 5 \$\mathbb{D}\$ 6 \$\mathbb{D}\$ 7 \$\mathbb{E}\$ \text{Iron Wire.} -(See Wire.)

\*\*TEKL.\*\*—Dury . Ingots, Bars, Sheets, &c., valued at \$4 \mathbb{D}\$ 10 or less, \$5 \mathbb{A}\$ ad val.; valued above \$4 \mathbb{A}\$ and not above \$7 \mathbb{D}\$ \mathbb{D}\$. \$24 \mathbb{D}\$ \mathbb{D}\$ : raised above \$76 \mathbb{A}\$ and not above \$10 \mathbb{D}\$ \mathbb{D}\$ \mathbb{D}\$. \$234 \mathbb{D}\$ \mathbb{D}\$ : raised above \$76 \mathbb{A}\$ and not above \$10 \mathbb{D}\$ \mathbb{D}\$. \$24 \mathbb{D}\$ \mathbb{D}\$ \mathbb{D}\$ is raised above.

\*\*Acc. cold hammered or polished, in any way in addition to ordinary hot rolling, \$1\delta \mathbb{D}\$ \mathbb{D}\$ in addition to the above.

\*\*American Coat Steel.\*\*

American Cast Steel. Chrome Steel.
Too: Steel, ordinary sizes, % to 3 inches,

net. 10 @ 14¢
Adamantine Shoes and Dies. 8 @ .¢
Magnet Steel 14 @ .¢ English Steel. Best Cast
Extra Cast
Circular Saw Plates
Swaged, Cast
Best Double Shear Blister, 1st quality...
German Steel, Best...
2d quality...
3d quality...
Sheet Cast Steel, 1st quality...

Solder.

% & ½. Warranted.
Extra
No. 1 Refined
No. 2 Solder.
Extra wiping Charcoal Tin Plates. 

Coke Tin Plates. Ordinary. Best. .......\$4,50 \$4,40 @ 4,50

COPPER. -DUTY: Fig. Bar and Ingot, 40 Old Copper. St W D. Manufactured (including all Cold Rolled Sheet. vier. . # D, 19¢ ... # D, 21¢ ... # D, 23¢ ... # D, 24¢ 

TINNING. Sheathing Copper. (14 x 48.)

Hot Cold.
Rolled. Rolled. Rolled.
16 oz. to sq. ft. and heavier, per lb. 1se 19c
14 oz. and up to 16 oz., per lb. 1se 20c
2 oz and up to 14 oz., per lb 20c
Tunning, 6 cents each. Copper Bottoms. 

9'Nelli's Patent Planished Copper.-Net. 9°Neill's Patent Planished Copper. Net.
14 and 16 oz. and heavier 25°e By the case. 16 D 26°e
17 oz. and lighter 30°e Boiler Sizes.
7 in., 14x52. 8 in., 14x56. 9 in., 14x60.
and 16 oz. and heavier 25°e By the case. 16 D 28°e
And all sizes not over 26 in 160°e.
24x48 and 30x60.
and 16 oz. and heavier 36°e By 16 B 31°e
02 34x6 and 30x60.
The 31°e
18 fiantshed Brass same price as Planished Copper

Copper Wire, -(See Wire,) Sheathing Metal. elicw Sheathing Metal, W D ..... 184 @

BRASS AND GERMAN SILVER. rown & Sharpe's Gauge the Standard for Metal, Old English Gauge the Standard for Wire. \*SEF Manufacturers Price List, January 1\* 1884... dis 20 @ 20

Sizes above—\$15 per box extra for every 5 inches Discount 75&5 @ 75&10 \$. PAPER STOCK, &c. Centa e B. Conta e B. (Dealers' Selling Prices.) White Shirt Cuttings, No. 1..... No. 2..... Mill Assorted Whites.
Unbleached Muslins
City Whites No. 1
City Whites No. 2.
New Canton Flannels.
New Seconds, light
dars. Gunny Bagging, No. 1. Gunny Bagging, No. 1.

Kentucky Bagging, No. 2.

Kentucky Bagging, No. 2.

Burlap Bagging, No. 1.

Tar Shakings.

Hemp Twine Stock
Hard White Shavings, No. 1.

White Shavings, No. 2, Soft
Alized Shavings, No. 2, Soft
Alized Shavings, part White
Ledger and Writing.

Solid Stock.

Book Stock. No. 1, light.

Old Newspapers.

Pure Manlias
Begus Manlias and Hardwares, cwt.

Commons, ¥ 100 b.

Bluders' Board Cuttings. 176 8 336 336 246 246 246 136 146 146 146 100 60

	The second of th	. 1
	LEAD.—Dury: Pig. \$2 \$2 100 b; Old Lead, 24 5 b; Pipe and Sheet, 36 \$ b.	PAINTS, OILS, &c.
	D: Pipe and Sheet, 30 B D.	
	Pig434	
0-	Bar	Ordinary
ty	Block Tin Pine 400 dia 20	- nat
p	Tin Lined Pipe. 15¢, dis 20 Sheet. 7¾¢, dis 20	E   Black Doing in all   bags 84: assorted cans. 114
h	Sheet	Blue, Prussian, fair to best
	Shot. # bag, 25 b Drep, \$1.40; Buck, \$1.60 Chilled Shot, # bag, 25 b \$1.60	Blue, Prussian, fair to best. 40 @ 55@ 55@ in oil. 45 @ 55@ 55@ 55@ 55@ 55@ 55@ 55@ 55@ 55
	Chilled Shot, W bag, 25 D	
50	ANTIMONY.	Brown, Spanish
50	Hallett's	Dryers, Patent American asat'd cans, 9¢; kegs, 7c
00	Cookson	
	SPELTER-Duty : Pigs, Bars and Plates, \$1.50	in oil 14 @ 18 @ 25#
5	100 lbs. American, cash	in oil good, 30¢ best, 35¢
0	Regenment 9	Iron Paint, Bright Red B 2148
0	Bergenport	Brown
0	Sheet vide w Th.	Ground in oil Bright Red 656#
5	800 D casks	86 Red
0	Zinc - Open	Brown
0 1	Zinc Tubingdis. 10 th 20 %	
0	Zinc Tubing-Dis. 25 f.	
5	Plain	Orange Mineral
- 1	Fancy	Venetian (Eng.) dry
0	Scotch and Extra Patterns	Red Lead American 6364  Venetian (Eng.) dry \$1.65 @ \$1.70  in oil. asst'd cans, 11#; kegs, 8#
0	BABBITT METAL.	In oil
	N. P. U. 104 10 636 @ 76	blenna, American Raw, powdered
1	X X	Burnt, powdered 10 @ 18 @ 214
-1	J. B20¢	11 Raw 11 011
- [	WIRE.	Umber, Burnt, powdered4 @ 86
1	Warket Wire Put up in 68 h bundles.	Umber, Burnt, powdered
-	Nos. 00 to 9, 10, 11, 12, 13, 14, 15, 16, 17, 18.	44 11 m off 9 a 12 a 150
. 1		
	Bright Market Wire	English
	Charcoal. dis 471 %	White Lead, American, pure dry66
	11 Rale Wire. Nos. 7t o 12 018 0250 3	White Day 1 in oil 7 @ 750
1	Annealed Market Wire	Yellow Ochre French
	Annealed Market Wire	in oil, asst'd cans. 11¢; kegs, 8¢
1	" Grape Wire. Nos. 10 to 14 )	White Lead, American, Common
1	Coppered Market Wire	Yellow Chrome. 17 @ 276 In oil 14 @ 18 @ 206  Zinc White. American No. 1. dry 5 @ 66  No. 1, ln oil 54 @ 7 % 6
1	Galvanisad Market Wire	Zinc White. Amercan No. 1. dry 6 6 6
1	Galvanized Market Wire dis	
1	Stone or Weaving Wire.	in oil
1,	Nos 16 17 18 19 20 21 22 28 24 25 26	Olis.
12	Cents 14 15 16 19 20 21 22 98 24 25 26	
1 1	Vos 97 98 99 20 31 32 35 34 35 36	Bleached Whale, # gal 40 @ 424
10	Cents 98 99 80 82 88 35 87 40 45 55	Bleached Whale, ₱ gal.   40 @ 42e
1	dia 8716 65 70 %	Larg, Prime Winter
1	19 to 26 67 \( \) \( \) \( \) \( \) 70 \( \) \( \) 27 to 36	Cylinder Oil
1,	27 to 96	
1,	Jaivanized Stone Wire	Lineed, Raw. n casks and bols 65 426
1,	Steel Wire.	Linseed, Raw.n cases and ons. @ 45c
10	Cast Steel, Steel Wire list	Western,

\$0.26

.24 .25 .26 .28 .80 .82 .85 .88 .42 .45 .48 .51 .55 .56 .64 .76 .76 .1.00 .2.00 .2.00

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Rivets.

FRENCH GLASS.

1st. | 2d. | 3d. | 4th.

EFHIEH HH HB

\$10.50 \$9.00 \$8.50 \$8.60 11.80 10.75 10.25 9.75 15.50 14.00 13.60 12.50 16.50 15.00 13.50 12.50 17.75 16.25 14.75 19.00 17.50 15.25 21.00 19.50 17.00 22.00 20.25 18.00 23.00 21.25 19.00 24.00 22.75 21.00 24.50 24.50 28.00 25.50 24.50 28.00 26.50 24.50 28.00 27.50 24.50 28.00 28.00 20.75 21.00 29.00 20.75 21.00 20.75 24.50 24.50 28.00 20.75 24.50 28.0

1st. | 2d. | 3d. | 4t.

EFH LEH HH HB

January 27, 1885. Fer Box, 50 feet Single Thick.

25 6 x 8 to 10 x 15. 40 11 x 14 to 16 x 24. 50 18 x 22 to 30 x 30. 54 15 x 36 to 24 x 30. 60 35 x 28 to 34 x 36. 70 36 x 48 to 34 x 36. 70 36 x 46 to 30 x 50. 80 36 x 46 to 30 x 50. 90 30 x 55 to 34 x 56. 10 36 x 60 to 40 x 60. 100 36 x 60 to 40 x 60.

Western. Brass and Copper Wire.
Old English Gauge the Standard.—Dis 20 @ 25,
Gilding
Common
High
Low and
Brass
Brass
Copper. Sundries 5% @ 6% % 6 6% % Asphaitum, Cuban. F B
Benrine, 62° Egyption

Benrine, 62° Egyption

Chaik, F 190 B

Block
Crucibles No. 14 and upward, per number.
Grain Emery, 300 B keys.
Flour Emery, finest quality
Frostings.
Glue, White.

Sheet.
Glaziers' Points, Zinc. F box.
Gum. Copal.

Daniers

Bellac, English

Stellac, English

Mineral Wool, ordinary, F B

extra.

Naphtha. 70° Asphaltum, Cuban, P h ... Egyptian.... 25c
1 6 146
3 6 846
9 6 1046
9 6 3 1046
8 6 6
2 6 24
.\$2 6 22.2
.\$1.40 Naphtha. 70° extra.
Naphtha. 70°.
Naphtha. 70°.
Pumice Stone, selected Lumps.
Pune Tar, bbis.
Pitch. Spring Wire, 2 cents per pound advance. Whit-ened Wire, 3 cents per pound advance. Flat, Square and Half-Round Wire, 4 cents advance on Round Wire. Fancy Wire, not less than 10 cents advance on Round Wire. Spooling on one-pound Spools, 12 cents per pound extra. Spooling on tem-pound Spools or more. 2 cents per pound extra. Jet Black...

Waste, No. 1 Cop...

No. 1 White Machin

No. 2 White Machin

No. 1 Colored...

No. 2 Colored...

Washed Machine.

Whiting, Spanish, \$\pi\$ 100 \$\pi\$

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LOCK-CORNER SHELF BOXES,
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The Woodruff's Patent Celebrated American pending Eave Trough Hanger. The best in the we Manufactured by GEO, W MEARTLEY, Toledo spand Variety Worse 3: St. Clair St., Toledo, Ohio.



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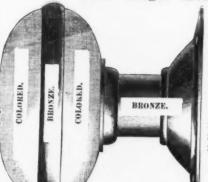
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Solid Cast Steel and every Bit fully warranted.

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CONSIDERED MOST DESIRABLE. Garnet (Dark Cherry or Mahogany). Olive (Dark).

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ELIZABETHPORT STEAM CORDAGE CO., MANUFACTURERS OF MANILA, SISAL AND TARRED CORDAGE OF ALL KINDS.

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LEADER

STEEL Anti-Friction Hanger

NO BETTER HANGER MADE.

Unsurpassed for S'rength, Fase of Working or Sim-plicity of Construction. Made of Steel and used on the popular Terry Steel Rail. A ready seller and full of merit. Try them. Write for discounts.

4 In. Wheel, 6 Ft. Run, \$15.00 per dez. pair. 5 In. 11 10 Ft. 11 18.00 Write for di counts

TERRY MANUFACTURING CO., HORSEHEADS.: N. Y.

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#### Stearns's Silent Saw Vises

E. C. Stearns & Co., Syracuse, N. Y., whose general Western agents are H. H. & C. L. Munger, Chicago, Ill., have recently made an improvement in their saw vises which are known to the trade. The im-



Fig. 1-Silent Saw Vise, No. 10.

provement consists in the addition of a third jaw to the vise This jaw is faced with solid rubber, and presses against the side of the saw, under and parallel with the metal jaws, effectually preventing vibration, and thus

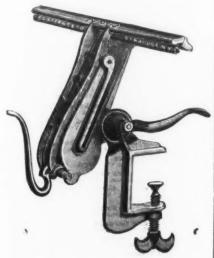


Fig. 2.-Silent Saw Vise, No. 32.

greatly reducing the noise while a saw is being filed. It is brought into position after the saw has been gripped by the metal jaws, the same lever operating them having a cam which operates the rubber jaw when the lever is pushed home. The new vise is made in two styles, No 10, shown in Fig. 1, being made for permanent attachment to a bench or frame, and No. 33, shown in Fig. 2, being provided with a clamp to fasten on the bench. The No. 33 has also a patent ball and socket joint of ingenious construction, which enables an operator to set the vise at any angle desired. The utility of this fea-ture is alluded to as affording a great convenience in filing saw teeth to a particular bevel. A handsome revolving stand for the display of vises is furnished free to dealers selling the goods.

#### A New Lock and Knob.

Bullard & Gormley, of Chicago, are about to put upon the market a line of locks and knobs patented a hort time since which possesses special features. We

show in Fig. 1 of the illustrations a general view of a mortise lock of this

through which the knob shank is inserted. rapid and well distributed delivery. through which the knob shank is inserted. By sliding it horizontally forward it is securely fastened, and when the escutcheon is screwed to the door the knob shank is securely fastened to its place the same as if it was a part of the door itself. The second of our engravings shows a detail of the yoke, which is operated by the cam on the end of the knob shank. It will be seen that the bearing for the shank of the knob is conical in shape, and that the parts fit accurately in shape, and that the parts fit accurately together, thus overcoming all lost motion. together, thus overcoming all lost motion. The two knobs, when placed in position, bear against opposite sides of the piece represented in Fig. 3, and each has its own bearing in the yoke. Accordingly, each is turned independent of the other. The escutcheon used with these locks is of peculiar shape, and inside of the projecting loss which surrounds the shape of the boss, which surrounds the shank of the knob, ribs are cast which give the knob a long bearing which successfully resists rat- ting or looseness No ad justment to the thickness of the door is required. The parts accommodate them selves, and the only difference in using two locks of the same kind on doors of different thickness would be the slight difference in space between

the knob and the face of the escutcheon. The lock, it will be noticed, is fur-nished with a round bolt. The makers direct atten-tion to the fact that there is no lost motion in any of the parts of which this article is composed; that there are no loose spindles, screws or washers, and that the rattling and shaking so com-mon to the old spindle knob is successfully

#### Galvanized-Iron Sprinkling Pot.

The accompanying illustrations represent a new and improved galvanized-iron sprinkling pot, which has recently been put on the



Fig. 1.—New Galvanized Iron Sprinkling

market by Whiting & Co., 468 and 470 Cherry street, New York. The manufacturers refer to it as constructed on a new



Fig. 2.—Showing Construction

of a mortise lock of this description, with a part of the case broken away, rether case broken away, re-

Fig. 3.-End

of Latch

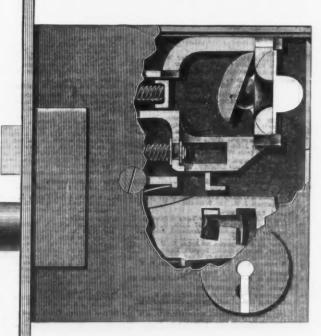


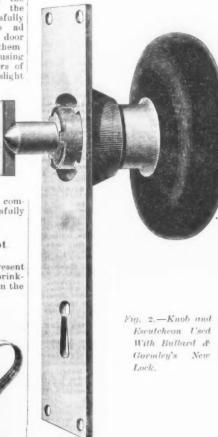
Fig. 1 .- View of Works of New Lock Brought Out by Bullard & Gormley.

vealing the interior mechanism. Fig. 2 shows a knob or spindle, which indicates the peculiar principle upon which it operates. The construction of the lock is simple, being of the kind known as the "easy spring latch," with the hub left out. In its construction there is an elongated opening in the ease,

10, 12 and 16 quart sizes.

#### Spring Steel Board Rules.

th is
The Lufkin Rule Company, Cleveland,
Ohio, are making the nickel-plated spring
steel board rules, which are illustrated in



the accompanying engraving. This article has been put on the market to meet the demand for a board rule that is practically indestructible, yet not clumsy to handle. It is described as made of the best English steel, and is warranted to be of the finest spring temper. The weight of the steel rule does not exceed that of the wooden one, as it is not necessary to make it as wide or thick. The head is of steel, and is alluded to as very strong, being the same style of

accompanying illustration. Its object will be readily apprehended as the protection of gases, and other impurities, and it is especially intended for use where emery wheels are employed in white lead works, chemical works, glass and blast furnaces, planing mills, &c., as well as other places where dust, foul air, &c., have to be en-The respirator consists, as indicated by the cut, of an elastic rubber mouthpiece, which is held in position by an elastic rubber band. The air enters through the openings in the front of the respirator, and passes through a damp sponge, which is there held in place by a flange on the inside. When the air is discharged from the lungs it finds a way of escape through the opening, which is represented in the upper portion of the respirator, in which there is a mica valve, which opens very readily, permitting the air thus to be discharged. The operation of this valve prevents the entrance of the air through it, so that all the air breathed is drawn through the wet sponge. Breathing with the respirator is referred to



The Hurd Patent Respirator,

as easy, allowing it to be worn constantly without the least inconvenience. The durability of this article is referred to, and the efficiency with which it does its work. Information as to its price is given in the trade report.

The A. A. Griffing Iron Company, 454

## 

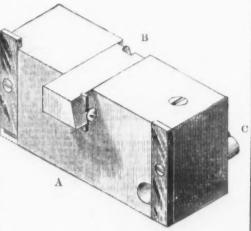
Spring Steel Board Rules.

head that the company out on their best street, Chicago, send us their 1886-87 catarules. The handle is made to conform to logue and price list of the Bundy patent the shape of the hand. With reference to radiators which they manufacture. In their the figures and divisions, the company state that they use a plain block figure, and make the divisions with a good-sized diamond-shaped dot, the points of which give the exact measur-ment. The diamond is referred to as preferable to a line, being more distinguishable, and not weakening the rule.

The figures and divisions are black and easily at the many improvements made in the Burdy radiator since their last catalogue was issued has made it necessary to publish a new and more complete one, in which they have endeavored to so list their goods as to enable patrons to easily determine prices, and divisions are black and easily and divensions of radiators required.

ing. The gauge consists of an oblong block of wood provided on one face, at the ends, with surface plates to prevent wearing. Through this block are inserted accurate working gauge rods, so adjusted and arranged as to provide in one tool all the necessary tools required in setting butts in hanging a door. Referring to the engraving, it will be seen that the blades A and B are contained in a single red working cross-wise of the bl.ck. The point A works downwardly from the rod, while the point B extends in the opposite direction. The blade A is used for cutting the length and depth for insertion of the hinge on the door. When the blade A has been correctly set, the blade B is then in position for cutting the length and depth on the door jamb. In the con-struction of the tool in this particular there is an allow-ance of  $\frac{1}{4\pi}$  inch for required slackness between the door and

Reed & Auerbacher, 229 Bowery. New York, are introducing to the trade Plante's Gauge for hanging doors, a general view of which is afforded in accompanying engraving. The gauge consists of an



Plante's Gauge Block for Hanging Doors,

slackness between the door and the door-step. This allowance can be varied within certain limits by placing a strip of paper under the blade B when adjusting it. By this means the utmost nicety of fit can be obtained. The blade C is used for marking the depth on the door and the door casing. The inventor claims for this tool that it not catalogue opens with an extensive telegraph code, which is followed by a short account of the advantages of steam as compared with furnace heating, and a general excellent and workmanlike manner, but at

The the same time saves labor, enabling the workman to hang two doors in the time that is commonly required to hang one.

comes illustrations with accompanying tables of sizes and prices of the different styles of the Bundy direct radiator, the Bundy incloset dining-room radiator, the Bundy incloset dining-room radiator, the Bundy incloset dining-room radiator. direct radiator of different styles, with plain and extended surface, and Gold's pin in-direct radiator. In the succeeding division direct radiator. In the succeeding division of the catalogue, sectional and perspective views are given of the different Bundy radiator loops, and the Thompson radiator loop. The next few pages are devoted to direct indirect radiators, after which the subject of hot water radiators is taken up. The catalogue proper closes with illustrations and price list of vertical tube, antique brass direct radiator screens. Some 40 pages at the back of the catalogue are occupied with testimonial letters, printed in facpied with testimonial letters, printed in fac-simile, and a long list of references. The catalogue is a volume some 0 ½ x 12 inches in size, tastefully bound in dark green cloth. The paper is of fine quality, the engravings are carefully executed, and the letter-press excellent, making the whole a very hand

#### The Master Mechanics' Convention

The business arranged for consideration at the approaching Master Mechanics' Con-vention gives good ground for the expectavention gives good ground for the expectation that the meeting will prove both profit able and interesting. Eight subject are under the investigation of committees. Most of them, says the National Car and Locomotive Builder, are in the hands of energetic workers, who are likely to bring out all facts worthy of attention. Nearly all the subjects offer ground for conflicting views, and several of them have already been discussed in railroad clubs.

Proportion of locomotive cylinders, a most important subject, which has received too little consideration from designers, is in the hands of Charles Blackwell, F. L. Wanklyn and T. E. Barnett. Mr. Blackwell has devoted great attention to this subject,

has devoted great attention to this subject, and his views are certain to reflect a clear

light where much darkness yet prevails.

Traction increasers is under investigation by R. H. Briggs, D. O. Shaver and T. J. Hatswell. Mr. Briggs has been a warm advocate of traction increasers where they were likely to do any good, and Mr. Hats-well also has had some experience with them, so the association is likely to learn more about the effects on locomotives of traction increasers than has hitherto been

Cross-heads and guide-bars, an important feature toward securing safety and durability to the working parts of locomotives, is under investigation by N. W. Howison and J. B. Henney, both of whom have had considerable. siderable experience in the building of loco-motives, and are likely to judge fairly the merits of the various types.

Steam packing, which includes the various forms of piston packing, and aims to find out the most economical and satisfactory packing for piston rods, valve stems, regulations of the various forms. lator and air-pump stuffing-boxes, is in the hatds of J. W. Stokes, Allen Cooke and Henry Schlacks, and all of them are work-ing industriously to obtain the facts neces-sary for a full report.

sary for a full report.

Locomotive preparation, an important subject which has received a singularly small share of attention in the past, will be reported on by G. W. Ettenger, W. H. Thomas and I. W. Gentry, all comparatively new but able members. The subject embraces washing and lighting up locomotives, showing the last system in the feet washing and lighting up locomotives. showing the best system in use for washing out, and most economical and expeditions mode of raising steam and the necessary plant for the same. Methods of washing out have been improved from time to time, and they are now fairly efficient in the regions where bad water makes washing out an important operation; but high ing up remains practically where it was 50 years ago. If the committee succeed in devising means of firing up that will dispense with the ancient woodpile, the members will earn enable patrons to easily read. In order to prevent rusting, the rule is nickel-plated and coated with a fine lacquer, which is baked on to the steel and forms an impervious coating. But before nickel plating, a dead surface is given to the steel which takes away the glare or reflection when used in the sunlight. These rules are made in 2½, 3 and 3½ feet.

Gauge for Hanging Doors.

enable patrons to easily style and dimensions of radiators required. Among the improvements to which special attention is directed is their hot water and hot-closet dining-room radiators. Mention is also made of the fact that the patents referred to in this catalogue are owned and used exclusively by this company. During the past year the A. A. Griffin Iron Company have erected additional buildings, and purchased new machinery, especially designed for their work, thus largely increasing the radiators are made in 2½, 3 and 3½ feet.

Gauge for Hanging Doors. supplied to the various locomotives, the officers cannot with justice hold enginement very strictly to account for fuel wasted. If the report of this committee leads to im-provements in the methods of handling coal, it will effect an important work toward fuel

saving. Standard form of tire section is a subject continued, and is practically closed in a way that reflects great credit on the committee, J. N. Lauder, Jacob Johann and N. H.

What control has the engineer over the wear of the driving wheel tires: Is a question of the utmost importance that John Mackenzie, J. S. Graham and Fred. B. (1995). Griffith are trying to get answered.

The Burlington Brake Tests .- The Park electric brake, of Chicago, to which we referred a short time ago, will not enter the Burlington (Iowa) brake tests after all. Mr. Park withdraws for the sole reason that Mr. Park withdraws for the sole reason that he has been disappointed in getting his cars, his brakes being all ready. This will leave the list of contestants, as now understood, to be: Westinghouse, Eames, Hanseom, Card, American (the American company will enter an air-brake this year), Widdifield & Button, Carpenter and Boyden. The Rate brake will, we are informed.

# WHOLESALE METAL PRICES, MAY 11, 1887.

## METALS.

RON.—Duty: Bars, 8-10¢ to 11-10¢ 見 む; provided that no Bar Iron shall pay a less rate of dut than 35 s. Sheet, 11-0¢ to 15-10¢ 見 む. Band, Hoo ard Scroll, 1¢ to 14-10¢ 更 む. Railroad Bars weighing more than 26 む 夏 yard, 7-10¢ of 1¢ 夏 む.

High Hill											
Sta	nda	rd	A	m	e	ric	an	Pi	g Iro	n	
Foundry	No. 1	X.					199	ton	\$21.00	6	20
Gray For	No.	1	Se	01	te:	h	Pig	1r	on.	-	a 17.
Carnbroe							要	dos	821.50	6	22.

Carnbroe	 					22 60 6 00 00
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Langloan	 0				2 August	
Summerico					ton	21.75 @ 21.00
Dalmellington	 			- 40	ton	20,50 @ 21.00
EKIIIION				35	ton	20.50 @ 20.75
Clyde	 					
	8.8	i.m.	110			
- TV 4	35.00			90		# 90 00 @ 40 00

Wrought, \$ ton, from yard .... ... \$24 00 @ 24.50 Har Iron from Store.

Sheet Iron from Store. | Sheet Iron from Store | Common | R. G. | Cleaned | Sheet | To will | Sheet |

American Cold Rolled B. B... \$\mathbb{D}\$ 5 \$\psi\_0 7\$ \$\psi\_0 7\$

American Cast Steel.
For American Steel, see Pittsburgh quotations.

Chrome Steel.
Too: Steel, ordinary sizes, % to 3 inches, net. 10 @ 14¢. Adamantine Shoes and Dies. 8 @ ... \$ Magnet Steel 14 @ ... \$ English Steel.

English Steel.

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## Best Cast
Extra Cast...
Circular Saw Plates
Swaged, Cast
Best Double Shear
Blister, 1st quality
German Steel, Best...
2d quality...
Sheet Cast Sweel, 1st quality.
2d quality... 2d quality 10 14 ¢ 3d quality 12 b 14 ¢ 3d quality 15 b 12½¢ 5 TIN.—DUTY Plates, Sheets, Tagger and Terne, 1¢ % 10 : Bars, Block and Pizs free.

Bar		or an ability of the or A
	Charcoal Tin	Plates.
C 10x14	225 sheets **	box \$5.00 @ 6.8716
C 12x12	225 sheets · · ·	5.00 @ 6.871/2 10.25 @ 14.75
C 20x25	112 225 sheets	6.00 @ 9.8716
X 12x12	225 sheets	6.00 @ 9.3716
X 14x20	. 112 "	6.00 <b>(g.</b> 9.371 <b>(g.</b> 5.75
D C 12161	c17 100 "	6.00 @ 7.25
D X 12561	c17, 100 "	4 4 00 40 0 00

For each additional X add .. " 1.25 @ 2 25 Coke Tin Plates. Ordinary. .......\$4,50 \$4.40 6 4.50

C 10x14 \$4.50 C 12x12 ... 4.75 C 10x20, gutters, 225 sneets. 5.00 C 20x28 112 sneets. ... Terne Plates.
Prime Char. 2d. quality C 14x20 M.F \$6.50.
C 14x20 Old Process ... C 14x20 Old Process ... 4.3736 X 14x20 ... \$4.50 @ 4.75 4.3736 X 14x20 ... \$5.5 @ 6.00 C 20x28 ... 8.80 @ 9.30 8.75 X 20x28 ... 11.00 @ 12.00 Tin Boller Plates. 4.60 **4.65** 7.25 . 9.00 **50** \$18,25 .... 6,50 .... 13,25 4,25

8.75 8.50 @ 8.70 Tin Boiler Plates. COPPER.—DUTY: Fig. Bar and Ingot, 40 Old Conner. 36 W D. Manufactured (including all

Cold Rolled Sheet. 16 oz, per square foot, and heavier... 14 and 15 oz, per square foot..... 12 and 13 oz, per square foot.... 10 and 11 oz, per square foot.... TINNING. TINNIO.

Sheets, one side, 10, 12 and 14 x 48.......each, 8¢
Sheets, one side, other sizes. \$\mathbb{P}\$ square foot 2\(\frac{1}{2}\)\(\frac{

Sheathing Copper. (14 x 48.) | Hot | Cold. | Rolled. | White Shirt Cuttings, No. 1.....

Copper Bottoms, O'Neill's Patent Planished Copper.-Net.

O'Neill's Patent Planished Copper. Net. 18348
14 and 16 oz. and heavier 27c By the case. 10 23c
19 oz. and lighter. 33c

Boiler Sizes.
7 in., 14x50. 8 in., 14x60.
and 16 oz. and heavier 23ch ty the case. 10 23c

And all sizes not over 20 m 10 de.)
24x48 and 30x60.
and 16 oz. and heavier. 35c

31x48 and 30x60.
31x60
33x60
33x60 Planished Brass same price as Planished Copper

Copper Wire,-(See Wire,) Sheathing Metal. ellow Sheathing Metal, W 10

BRASS AND GERMAN SILVER. rown & Sharpe's Gauge the Standard for Metal Old English Gauge the Standard for Wire. ass Manufacturers' Price List, January 1"

a, 20 F	
514 ¢ dis 20 ¢ dis 20 ¢ dis 20 ¢ dis 20 ¢ c, \$1.65 \$1 65	
9 ¢	
\$1.50 \$\phi\$ 5\phi\$ 5\phi\$ 0 lbs. 634\phi\$7 \phi\$ 8 20 \$	

Hrass and Copper Wire.
Old English Gauge the Standard.—Dis 30 @ 25.
Gilding
Common
High
Low
Brass
Brass
Copper. \$0.26 \$0.30

All Nos. to No. 16, inclusive \$0.22

No. 17 and 18 .23

" 19 and 20 .24

" 21 .25

" 22 .26

" 23 .38

" 24 .80

" 25 .52

26 .55

27 .38

" 28 .42

" 29 .45

" 30 .48

" 31 .51

" 32 .55

" 30 .48

" 31 .51

" 32 .55

" 33 .59

" 34 .64

" 35 .70

" 38 .10

" 36 .76

" 37 .10

" 38 .10

" 39 .20

" 40 .26

Spring Wire, 2 cents per pound advance and Wire, 2 cents per pound advance

MISCELLANEOUS TINNERS' STOCK.

FRENCH GLASS.

January 27, 1885. Fer Box, 50 feet Single Thick. 1st. | 2d. | 8d. | 4th. Sizes. EFHIEH HH HB \$10.50 \$9.00 \$8.50 \$8.60 11.50 10.75 10.25 9.75 15.50 14.00 13.00 12.50 16.50 15.00 13.00 17.75 16.25 14.75 19.00 17.50 15.25 21.00 19.50 17.00 22.00 20.25 18.00 23.00 21.25 19.00 34.00 22.75 21.00 34.50 24.50 23.00 25 6 x 8 to 10 x 15., 40 11 x 14 to 16 x 34. 50 18 x 22 to 30 x 30. 54 15 x 36 to 24 x 30. 60 26 x 28 to 34 x 36. 70 26 x 36 to 26 x 44. 80 26 x 46 to 30 x 50. 84 30 x 52 to 30 x 54. 90 30 x 56 to 34 x 56. 10 36 x 66 to 40 x 60.

	1st.	2d.	3d.	464
Sizes.	EFH D	I E H	H H	H B
25 6 x 8 to 10 x 15 40 11 x 14 to 16x 24	16.00	\$12.50 15.00	\$12.00 14.50	\$11.50
50 18 x 22 to 20 x 30 54 15 x 36 to 24 x 30	22.00		19.50	
50 26 x 28 to 24 x 36 70 26 x 36 to 26 x 44, 80 26 x 46 to 30 x 50	25,00 26,00 28,00	28,00 25,00 26,50		
84 80 x 52 to 80 x 54 90 30 x 56 to 84 x 56	30.00	28.00 30.00	26.00	
34 34 x 58 to 34 x 60 30 36 x 80 to 40 x 60	32,50 36.00	31,00 33,50	29.00 82.00	

Double Thick.

Sizes above—\$15 per box extra for every 5 inches. Discount 75&5 @ 75&10 %.

PAPER STOCK, &c. (Dealers' Selling Prices.)

	H H No 0	0.00
	No. 2 b	514
	Mill Assorted Whites 414 @	5
	Unbleached Muslins 5	554
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e	City Whites. No. 2	62
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ÿ.	New Seconds, light 84 6	974
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	dark 214 @	294
	Cotton Canvas 438	496
g l	Linen Canvas No. 1	434
0	Seconds, City No. 1	136
,	Seconds, City No. 2	114
- 1	Colors, # cwt	60
_ 1	Manila Rope 294	074
e	Tarred 2h a	228
1	Gunny Bagging, No. 1	10.00
	Gund tongstus, No. 1	144
	No. 2 13, 6	134
6	Kentucky Bagging 4	
e i	Burlap Bagging, No. 1.	124
1	Tar Shakings 14 6 Hemp Twine Stock 34 6	2
- 1	Hemp Twine Stock 812	934
- 1	Hard White Shavings, No. 1	987
- 1		082
- 1		-24
- 1	Mixed Shavings, part White	256
- 1	Ledger and Watting	136
-1	Ledger and Writing 236 @	2%
- 1	Solid Stock	116
- 1		11.7
. 1		175
	Pure Manilas	762
-1	Pure Manilas Begus Manilas and Hardwares, cwt	100
- 1		60
- 1	Binders' Board Cuttings	00
- 1	Straw Board Cuttings. # owt	96
		75

4.5	PAINTS, OILS, dec.
	Paints.
340	
140	Ordinary
20 %	
20 %	
20 %	Black Paint, in oilkegs, 8#; assorted cans, 1
.65	" " In oil 45 @ 5
65	
-	" Ultramarine
e	Brown, Spanish
- 7	Dryggs Patent American est'd cans Od - Fore
.50	in oil 14 @ 18 @ 25
	" In oil
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	Hed
18	" " Purple " " 6
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	Mineral Paints2@4
27	Orange Mineral
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36	Red Lead American
!	" Indian Dry
7¢	Money American Dam named and
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7¢ 7¢	bienna, American Raw, powdered. 4468 Burnt, powdered. 10 @ 16 @ 2068 Burnt in oil. 10 @ 16 @ 2068 Burnt in oil.
79	
- 1	Umber, Burnt, powdered
- 1	Bar nowdoned 466750
8.	" in oil 9 4 12 6 10
6	Vernillon Chimons904
8	English
8	White Lead American pure dry
×	White Lead, American, pure dry
~	White Paris, English Prime 2 @ 25¢ Yellow Ochre, French 11.5 in oilasst'd cans.11¢: kegs, 8¢
2	zellow Ochre, French
	Vermontin casks, 114
6	Yellow Chrome
6	" in oil
6	cinc White. Amercan No. 1. dry
1	10 Pronch (Paris Dry)
	Yellow Chrome
5	
3	Oile.
	Blooched Whete 20 and 40 @ 496

Galvanized Market Wire...

Fence Wire...

Stone or Weaving Wire.

Nos. 16 17 18 19 20 21 22 28 24 25 26
Cents. 14 15 16 19 20 21 22 28 24 25 26
Nos. 27 28 29 30 31 32 35 34 35 36
Cents. 28 29 30 82 38 35 37 40 45 55
Nos. 16 to 18.

Nos. 16 to 18.

19 to 26.

19 to 26.

27 to 38.

Galvanized Stone Wire.

Cast Steel, Steel Wire list.

Wire.

Cast Steel, Steel Wire list.

When Standard.—Dis 20 \$25.
Gliding
Cotton Seed, Renned

Sundries

25¢
...1 @ 14¢
.8 @ 8½¢
.8 @ 8½¢
.9 @ 10½¢
.8 @ 6¢
.2 @ 2½
.\$2 @ \$2.2.
.\$1.40

INTERCHANGEABLE
LOCK-CORNER SHELF BOXES,
Screw Cases, &c.,
FOR THE HARDWARE TRADE,
S. H. GREEN,
99 Park Place, New York.



The Woodruff's Patent Celebrated American Suspending Eave Trough Hanger. The best in the world Maoula-tured by GEO. W HEARTLEY, Toledo Sprin and Variety Works to St. Clair St., Toledo Obio.



ings. Columbus Bolt Works, Columbus, O.

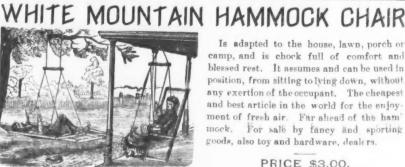
Parties looking for a noise less, economical and efficient Power will do well to HOLYOKE, MASS.

send for descriptive Cataloque, free. Amherst Hydraulic Motor Co.,

# FRANCIS AXE CO., Buttalo, N Y.

Manufacturers of STANDARD and ALL-STEEL AXES.

# BUFFALO " BEVELED AXE.



Is adapted to the house, lawn, porch or camp, and is chock full of comfort and blessed rest. It assumes and can be used in position, from sitting to lying down, without any exertion of the occupant. The cheapest and best article in the world for the enjoyment of fresh air. Far ahead of the ham mock. For sale by fancy and sporting goods, also toy and hardware, dealers.

PRICE \$3.00.

THE ALFORD & BERKELE CO.,

Sole Agents for the Manufacturer,
P. O. Bo 2002, New York 77 Chambers St. SEND FOR CIRCULAR.

C. E. JENNINGS & CO.'S Extension Lip Auger Bits



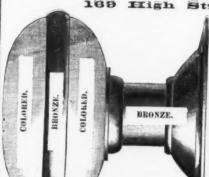
Only the best materials used and the most skilled labor employed in the manufacture of these goods.

Solid Cast Steel and every Bit fully warranted. Price per full set of 13 Bits, 32½ quarters, put up in a Fancy Wood Box, with Rack to hold each Bit...

C. E. JENNINGS & CO., 69 Reade and 87 Chambers Streets, . . . New York.

BOSTON KNOB CO., THE

169 High Street, Boston.



Reduction in Price. COLORS

CONSIDERED MOST DESIRABLE.

Garnet (Dark Cherry or Mahogany). Olive (Dark).

Olive (Light) 10. Drab.

13. Brown (Light). 14. Brown (Light Cherry).

All Colors Warranted Not to Fade, List Price \$10 per Doz. Send for Illustrated Catalogue:

SHERMAN & FEARING, 100 Chambers St., New York, General Agents.

BINGHAM & CO.,

MANUFACTURERS AND DEALERS IN

## HARDWARE,

RAILWAY, MINERS', ENGINEERS', ARCHITECTS', MECHANICS', MACHIN-ISTS' and FACTORY TOOLS and SUPPLIES.

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CLEVELAND, OHIO.

ALEXANDER BROS ----PHILADELPHIA

ELIZABETHPORT STEAM CORDAGE CO., MANUFACTURERS OF MANILA, SISAL AND TARRED CORDAGE OF ALL KINDS.

BINDER TWINE A SPECIALTY. 46 South Street, NEW YORK.



**※THE LEADER** ※ STEEL

Anti-Friction Hanger NO BETTER HANGER MADE.

Unsurpassed for S'rength, Fase of Working or Sim-popular I for Steel and used on the oppular I erry Steel Rail. A ready seller and full of nerit. Try them. Write for discounts.

4 In. Wheel, 6 Ft. Run, \$15.00 per doz. pair. 5 In. 4 10 Ft. 4 18.00 " 4

Write for di counts, TERRY MANUFACTURING CO., HORSEHEADS.: N. Y.

, 1887.

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#### Stearns's Silent Saw Vises.

E. C. Stearns & Co., Syracuse, N. whose general Western agents are H. H. & C. L. Munger, Chicago, Ill., have recently made an improvement in their saw vises which are known to the trade. The im-



Fig. 1-Silent Saw Vise, No. 10.

provement consists in the addition of a third jaw to the vise This jaw is faced with solid rubber, and presses avainst the side of the saw, under and parallel with the metal jaws, effectually preventing vibration, and thus

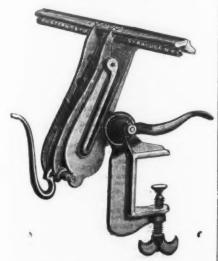


Fig. 2.-Silent Saw Vise, No. 32.

greatly reducing the noise while a saw is being filed. It is brought into position after the saw has been gripped by the metal jaws, the same lever operating them having a cam which operates the rubber jaw when the lever is pushed home. The new vise is made in two styles, No 10, shown in Fig. 1, being made for permanent attachment to a bench or frame, and No. 33, shown in Fig. 2, being provided with a clamp to fasten on the bench. The No. 33 has also a patent ball and socket joint of ingenious construction, which enables an operator to set the vise at any angle desired. The utility of this feature is alluded to as affording a great con-venience in filing saw teeth to a particular bevel. A handsome revolving stand for the display of vises is furnished free to dealers selling the goods.

#### A New Lock and Knob.

Bullard & Gormley, of Chicago, are about to put upon the market a line of locks and knobs patented a short time since which possesses special features. We show in Fig. 1 of the

illustrations a general view

through which the knob shank is inserted. By sliding it horizontally forward it is securely fastened, and when the escutcheon is screwed to the door the knob shank is poses. The handles are described as strongly affixed by beading, wiring and riveting. The pot is made up and put together in black iron and galvanized afterward, and the manufacturers refer to it as thus practically the knob shank. It will be seen that the bearing for the shank of the knob is conical in shape, and that the parts fit accurately together, thus overcoming all lost motion. in shape, and that the parts fit accurately together, thus overcoming all lost motion. The two knobs, when placed in position, bear against opposite sides of the piece represented in Fig. 3, and each has its own bearing in the yoke. Accordingly, each is turned independent of the other. The escutcheon used with these locks is of peculiar shape, and inside of the projecting boss, which surrounds the shank of the knob, ribs are cast which give the knob a long bearing which successfully resists ratting or looseness. No adjustment to the thickness of the door is required. The parts accommodate them selves, and the only difference in using selves, and the only difference in using selves, and the only difference in using two locks of the same kind on doors of different thickness would be the slight difference in space between the knob and the face of

the knob and the face of the escutcheon. The lock, it will be noticed, is fur-nished with a round bolt. The makers direct atten-tion to the fact that there is no lost motion in any of the parts of which this article is composed; that there are no loose spin-dles, screws or washers, and that the rattling and shaking so com-mon to the old spindle knob is successfully

#### Galvanized-Iron Sprinkling Pot

The accompanying illustrations represent a new and improved galvanized-iron sprink-ling pot, which has recently been put on the



Fig. 1.—New Galvanized Iron Sprinkling Pot.

market by Whiting & Co., 468 and 470 Cherry street, New York. The manufacturers refer to it as constructed on a new



Fig. 2.—Showing Construction.

of a mortise lock of this description, with a part of the case broken away, rethe pot, making it strong and durable, and

Fig. 3.-End of Latch

Yoke.

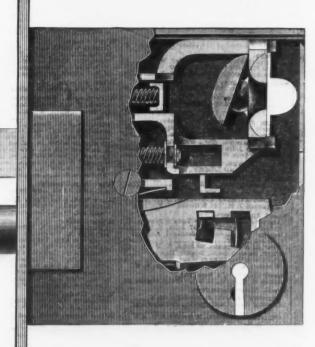


Fig. 1.-View of Works of New Lock Brought Out by Bullard & Gormley.

rapid and well distributed delivery. The rose or sprinkling tip is removable by a turn-screw for clearing and cleansing purposes. The handles are described as strongly affixed by beading, wiring and riveting. The pot is made up and put together in black.

The Hurd Patent Respirator.

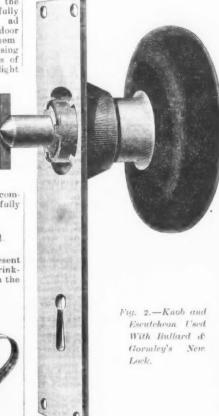
The distributed delivery. The workman to hang two doors in the time that is commonly required to hang one.

The Hurd Patent Respirator.

Comes illustrations with accompanying tables of sizes and prices of the different styles of the Bundy direct radiator, the Bundy in closet dining room radiator, the Bundy in and extended surface, and Golf's pin in-

#### Spring Steel Board Rules.

The Lufkin Rule Company, Cleveland, Ohio, are making the nickel-plated spring steel board rules, which are illustrated in



the accompanying engraving. This article has been put on the market to meet the demand for a board rule that is practically indestructible, yet not clumsy to handle. It is described as made of the best English steel, and is warranted to be of the finest spring temper. The weight of the steel rule does not exceed that of the wooden one, as

The Morley Respirator Company, East Saginaw, Mich., are manufacturers of this article, which is represented in use in the accompanying illustration. Its object will be readily apprehended as the protection of be readily apprehended as the protection of the throat and lungs from dust, poisonous gases, and other impurities, and it is especially intended for use where emery wheels are employed in white lead works, chemical works, glass and blast furnaces, planing mills, &c., as well as other places where dust, foul air, &c., have to be en-countered. The respirator consists as inwhere dust, four air, cc., have to be en-countered. The respirator consists, as in-dicated by the cut, of an elastic rubber mouthpiece, which is held in position by an elastic rubber band. The air enters through the openings in the front of the respirator, and passes through a damp sponge, which is there held in place by a flange on the inside. When the air is discharged from the lungs it finds a way of escape through the opening, which is represented in the upper portion of the respirator, in which there is a mica valve, which opens very readily, permitting the air thus to be discharged. the air thus to be discharged. The opera-tion of this valve prevents the entrance of the air through it, so that all the air breathed is drawn through the wet sponge. Breathing with the respirator is referred to



The Hurd Patent Respirator,

as easy, allowing it to be worn constantly without the least inconvenience. The durability of this article is referred to, and the efficiency with which it does its work. Information as to its price is given in the trade report.

The A. A. Griffing Iron Company, 454 it is not necessary to make it as wide or thick. The head is of steel, and is alluded to as very strong, being the same style of branch office at 42 and 44 West Monroe

## 

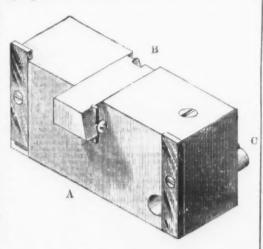
Spring Steel Board Rules.

the shape of the hand. With reference to the figures and divisions, the company state that they use a plain block figure, and make the divisions with a good-sized diamond-shaped dot, the points of which give the exact measurement. The diamond is referred to as preferable to a line, being more distinguishable, and not weakening the rule. distinguishable, and not weakening the rule. The figures and divisions are black and easily read. In order to prevent rusting, the rule

The gauge consists of an oblong block of wood provided on one face, at the ends, with surface plates to prevent wearing. Through this block are in-serted accurate working gauge-rods, so adjusted and arranged as to provide in one tool all the necessary tools required in setting butts in banging a door. Referring to the engraving, it will be seen that the blades A and B are contained in a single red working cross-wise of the bl.ck. The point A works downwardly from the rod, while the point B extends in the op-posite direction. The blade A is used for cutting the length and depth for insertion of the hinge on the door. When the blade A has been correctly set, the blade B is then in position cutting the length and depth on the door jamb. In the con-struction of the tool in this particular there is an allowance of  $\frac{1}{16}$  inch for required slackness between the door and

head that the company out on their best street, Chicago, send us their 1886-87 catarules. The handle is made to conform to the shape of the hand. With reference to radiators which they manufacture. In their distinguishable, and not weakening the rule. The figures and divisions are black and easily read. In order to prevent rusting, the rule is nickel-plated and coated with a fine lacquer, which is baked on to the steel and forms an impervious coating. But before nickel plating, a dead surface is given to the steel which takes away the glare or reflection when used in the sunlight. These rules are made in 2½, 3 and 3½ feet.

enable patrons to easily determine prices, the ancient woodpile, the members will earn the gratitude of all the railroads in America. Coaling up locomotives is another subject that has been little discussed, probably because for many roads the motive-power department has nothing to do with handling coal, and used exclusively by this company. During the past year the A. A. Griffin Iron Company have erected additional buildings, and purchased new machinery, especially defined and control of the gratitude of all the railroads in America. Coaling up locomotives is another subject that has been little discussed, probably because that has



Plante's Gauge Block for Hanging Doors

the door-step. This allowance can be varied extended for inspecting the goods in the within certain limits by placing a strip of different stages of manufacture, and paper under the blade B when adjusting it.

By this means the utmost nicety of fit can be of their radiators will be given. The vealing the interior mechanism. Fig. 2 shows a knob or spindle, which indicates the peculiar principle upon which it operates. The construction of the lock is simple, being of the apex near the top, thus affording with the hub left out. In its construction with the apex near the top, thus affording with the hub left out. In its construction of the water, thus facilitating a free exit for the water, thus facilitating a within certain limits by placing a strip of the working qualities of the working qualities. By this means the utmost nicety of fit can be obtained. The blade C is used for marking the interior mechanism. Fig. 2 shows a knob or spindle, which indicates the peculiar principle upon which it operates. The opening of the spout into the pot or cylinder is trianglear, with the base of the utmost nicety of fit can be given. The blade C is used for marking the interior mechanism. Fig. 2 shows a knob or spindle, which indicates the peculiar principle upon which it operates. The blade C is used for marking the interior mechanism. Fig. 2 shows a knob or spindle, which indicates the peculiar principle upon which it operates. The blade B when adjusting it.

By this means the utmost nicety of fit can be given. The blade C is used for marking the depth on the door and the door casing. The inventor claims for this tool that it not account of the advantages of steam as companies are expected to be on the depth on the door and the door casing. The inventor claims for this tool that it not account of the advantages of steam as completed representation of the working qualities of the working qualities. By this means the utmost nicety of it can be given. The blade C is used for marking the interior of the working qualities o

comes illustrations with accompanying tables of sizes and prices of the different styles of the Bundy direct radiator, the Bundy hot-closet dining-room radiator, the Bundy indirect radiator of different styles, with plain and extended surface, and Golf's pin indirect radiator. In the succeeding division of the catalogue, sectional and perspective views are given of the different Bundy radiator loops, and the Thompson radiator loop. The next few pages are devoted to direct-indirect radiators, after which the subject of hot water radiators is taken up. The catalogue proper closes with illustra-The catalogue proper closes with illustra-tions and price list of vertical tube, antique brass direct radiator screens. Some 40 pages at the back of the catalogue are occupied with testimonial letters, printed in foresimile, and a long list of references. The catalogue is a volume some 915 x 12 inches in size, tastefully bound in dark green cloth. The paper is of fine quality, the engravings are carefully executed, and the letter-press excellent making the wholes green had. excellent, making the whole a very hand some volume.

#### The Master Mechanics' Convention

The business arranged for consideration at the approaching Master Mechanics' User vention gives good ground for the expectation that the meeting will prove both profit able and interesting. Eight subjects are under the investigation of committees. Most of them, says the National Car and Locomotive Builder, are in the lands of energetic workers, who are likely to bring out all facts worthy of attention. Nearly all the subjects offer ground for conflicting views, and several of them have already been discussed in railroad clubs.

views, and several of them have already been discussed in railroad clubs.

Proportion of locomotive cylinders, a most important subject, which has received too little consideration from designers, is in the hands of Charles Blackwell, F. L. Wanklyn and T. E. Barnett, Mr. Blackwell has devoted great attention to this subject, and his views are contain to reflect and close.

has devoted great attention to this subject, and his views are certain to reflect a clear light where much darkness yet prevails.

Traction increasers is under investigation by R. H. Briggs, D. O. Shaver and T. J. Hatswell. Mr. Briggs has been a warm advocate of traction increasers where they were likely to do any good, and Mr. Hatswell also has had some experience with them, so the association is likely to learn more about the effects on locomotives of traction increasers than has hitherto been traction increasers than has hitherto been known.

Cross-heads and guide-bars, an important feature toward securing safety and durability to the working parts of locomotives, is under investigation by N. W. Howison and J. B. Henney, both of whom have had considerable averaging in the building of loce. siderable experience in the building of loco-motives, and are likely to judge fairly the

merits of the various types.

Steam packing, which includes the various

Steam packing, which includes the various forms of piston packing, and aims to find out the most economical and satisfactory packing for piston rods, valve stems, regulator and air-pump stuffing-boxes, is in the hatds of J. W. Stokes, Allen Cooke and Henry Schlacks, and all of them are working industriously to obtain the facts neces sary for a full report.

Locomotive preparation, an important subject which has received a singularly small share of attention in the past, will be reported on by G. W. Ettenger, W. H. Thomas and F. W. Gentry, all comparatively new but able members. The subject embraces washing and lighting up locomotives, showing the best system in use for washing out, and most economical and expeditious mode of raising steam and the necessary mode of raising steam and the necessary plant for the same. Methods of washing out have been improved from time to time, and they are now fairly efficient in the regions where bad water makes washing out

Gauge for Hanging Doors.

Reed & Auerbacher, 229 Bowery. New York, are introducing to the trade Plante's Gauge for hanging doors, a general view of which is afforded in accompanying engraving. The gauge consists of an very strictly to account for fuel wasted. If the report of this committee leads to improvements in the methods of handling coal it will effect an important work toward fuel saving.

Standard form of tire section is a subject ontinued, and is practically closed in a way that reflects great credit on the committee, J. N. Lauder, Jacob Johann and N. H.

What control has the engineer over the wear of the driving wheel tires ! Is a question of the utmost importance that John Mackenzie, J. S. Graham and Fred. B. Griffith are trying to get answered.

The Burlington Brake Tests.-The Park electric brake, of Chicago, to which we referred a short time ago, will not enter the Burlington (lowa) brake tests after all. Mr. Park withdraws for the sole reason that he has been disappointed in getting his cars, his brakes being all ready. This will leave the list of contestants, as now understood, to be: Westinghouse, Eames, Hansoom, Card, American (the American company will enter an air-brake this year, Widdifield & Button, Carpenter and Boyden. The Rote brake will, we are informed, also come in. The Ward will not, as far as now known,

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Machine

ut Jonn & Son, New Haven, arnes W. F. & John. Rockford, Ill.
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Vice Machinery.

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Wire Naila.
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#### The Question of Freights.

FREIGHT CLASSIFICATIONS.

As in England so in America, the rail-roads were not developed according to any far reaching plan, but, like Topsy, they growed." It was reserved for the execuregrowed." It was reserved for the executive genius of a later day to combine the small lines into systems, and, in turn, to bring these systems into harmony. Classifications which represented the different tolls which should be levied upon property as each small road might determine, differed from each other as we might expect men's opinions to differ upon any disputed question. As short roads were joined into continuous lines between strategic points, the tinuous lines between strategic points, the new corporation would choose as its classifi-cation perhaps a combination of those exist-ing on the earlier lines. This would govern its local or station to station business. As its local or station to station business. As lines became systems and new questions of bung distance traffic arose, the systems agreed upon through classifications, often leaving the local rules undisturbed. Following natural geographical lines, the systems formed associations in the territory thus served, each association having its own tems formed associations in the territory thus served, each association having its own rules, classification and special conditions. The trunk lines comprise, generally speaking, the railways in the States from the seaboard to the Mississippi River and Lake Michigan, and from the Ohio to the Canada line; the Southern Railway and Steamship Association comprises the territory south of the Ohio and east of the Mississippi River; the different associations west of Chicago and St. Louis running down into Arizcua and New Mexico and up to St. Paul and Minneapolis, since they use but one classification, the Joint Western, may for our purpose be considered as one. Formerly the traffic to and from the Pacific Joast had a special classification of its own; since April I, however, it has been decided to use the Joint Western, or, as it is now known, "the Western Classification." Formerly, also, in the trunk-line territory were used three principal schedules—the East-bound, the West bound and the Middle and Western States; now, however, these are combined into the classification known as the "New Official"

These are the general divisions, though.

These are the general divisions, though, as noted in the cases of roads using one classification for through and another for classification for through and another for local freight, some of the railways in the divisions named have not adopted the agreements of the roads around them. As illustration of this we may mention the Mobile and Ohio and the Illinois Central railroads, which have so far insisted upon using in the State of Mississippi a classification which is a bad warmanger of the being way to the hindernoon of alississippi a classification which is a bad arrangement of their own, to the hindrance of the freedom of trade to and from that territory. Other long lines like the Northern Pacific have used their own classification for

their local traffic.

It will be seen that the tendency is strongly toward the use of a common classification by all the roads embraced in an association and which have a more or less common interest. Will this tendency continue until the whole country shall have but one uniform system for the classification of freight? There can be no question but that the easy flow of trade is checked between distant parts of our country by the application of a system of rules at some junction point different from these under which the property was shipped. Stability of rates and a knowledge of them which can be easily acquired by merchants are of great importance to the free interchange of products. This stability is in a great measure secured by the provisions of the Interstate law requiring publication without change; but without uniformity in the describer of the production difficulty. their local traffic. and Mr. H. H. Rogers, of New York, had secured control of new iron-ore deposits discovered in the vicinity of the Vermillion Lake mines, and it was their purpose to build a railroad to Lake Superior in case they were unable to make terms with the free interchange of products. This stability is in a great measure secured by the provisions of the Interstate law requiring publication without change; but without uniformity in the classification it must continue difficult for the trading public to arrive at through rates as quickly as our modern business methods demand. On the other hand, the adoption of a uniform schedule by the Railway Clearing House in Eagland is not a criterion for us. Our territory is large, our distances from points of supply to consume. criterion for us. Our territory is large, our distances from points of supply to consumption often great, and our soil, climate and con tion often great, and our soil, climate and conditions naturally diverse, all make it difficult, if not impossible, that any agreement can be reached by which all our different productions can be everywhere treated alike. The tropical productions of California compete in the Eastern market with the fruits from the Mediterranean. The former must be carried to our markets at rates which will enable them to be sold here, since the price which can be obtained is fixed by foreign competition. The conditions between this long-distance traffic, and the same when carried for short distances on the Pacific Coast for home consumption, are so Pacific Coast for home consumption, are so amount of sulphur in the coke produced it

product must find a market in the West in

competition with factories on the spot who are not subject to these transportation expenses, for it should not be forgotten that

while, apparently fair, would in reality be most unjust and unwise. Within reasonable

limits it is best for both carriers and public to foster the widest competition of markets.

Our civilization may indeed be defined com-

backward toward the time when each com-

uniformity, while at the same time, by exceptional lists, to grant their special products such privileges as in equity they should

ALL WATER AND RAIL AND WATER RIVALRY. The rivalry between all water and rail and

Water.			OI-			
To Chicago	1 35	2 36	-Cla 3 25	4 20	5 18	6
Cleveland	35	30	25	18	17	1
Port Hurou	56	48	38	28	25	22
St. Paul	71	56	45	85	38	:21
Water and	Ra	il.				
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O—Chicago... Cleveland... Detroit... Port Huron.. Duluth... St. Paul... Minneapolis... The all-rail transportation companies declare that their freighting interests are in no way jeopardized, either by the working of the commerce law or the unusual activity among the water transportation lines, and that it will require but a few weeks to whip into line the small short haul companies that now refuse to co-operate on fair terms, and to establish a uniform and just tariff rate satisfactory to every interest in tariff rate satisfactory to every interest in-

#### The Consolidation of Vermillion Lake Ore Interests.

This year has witnessed some very large financial operations in the transfer of Lake Superior iron ore properties, but the greatest of all was consummated on the 3d inst., when the control of the Minnesota Iron when the control of the Minnesota Iron Company and the Duluth and Iron Range Railroad Company was purchased by a syndicate of Chicago and New York capitalists, headed by Mr. H. H. Porter, of Chicago. The terms of the sale have not been made public, but it is understood that the consideration was not less than \$7,500,000 cash. The Minnesota Iron Company own the famous Vermillion Lake iron ore mines, and the capitalists interested in it built in 1832 the capitalists interested in it built in 1882 the railroad referred to for the purpose of conveying ore from the mines to Two Harbors, the nearest shipping point on Lake Superior, 68 miles distant. The road has Superior, 68 miles distant. The road has since been extended to Duluth to connect with the railroad system of the country, and now comprises a total length of about 100 miles. It includes, also, a land grant of about 600 square miles, six sections per mile. It is understood that Mr. Charlemagne Tower, Jr., under whose manage ment this magnificent property has been developed, will retain the position of president.

Mr. Porter and his associates, among whom are Mr. Jay C. Morse, of Chicago, and Mr. H. H. Rogers, of New York, had secured control of new iron-ore deposits dislargest and the most valuable in the world. The profit for 1887 on a product of 400,000 tons is estimated at \$800,000. It is under stood that, notwithstanding the affiliations

different that to apply the same rule to both did not stand the further tests and proved would be a manifest injustice. Again, it worthless. The Excelsior Coal Company, of often entirely alters the case whether the property is moved from West to East or during the past few weeks, and upon April 5 from East to West. Take, for example, completed the burning of a third oven. agricultural implements: The manufacturer in New England or New York may buy some of his supplies of wood and iron from Western markets; in turn his manufactured completed the burning of a third oven. These experiments have produced the most

expenses, for it should not be forgotten that in connection with the manufacture of sheet Steam," refers in an interesting manner to it is the great West to which manufacturers iron which he thinks might be put into effect water rams in steam pipes. In the April must look for future sales. To put the shipped Eastward, and the machines of New England when shipped Westward, upon the shipped the same basis as to classification and rate, livery during the coming season, and if the experience of the past is any guide they will admitted at the top of a vessel partially so tie themselves up that they will practically filled with cold water, condensation will be out of the market for months to come. In that event it will be very difficult for consumers who have not made contracts to our civilization may indeed be defined commercially as a full interchange of product. It is easy to say that the New England time to time. Now he says it would be very factory should move West, but if this idea were fully carried out we should take steps facturers if they would endeavor to have secure such supplies as they may need from time to time. Now he says it would be very stocks of sheet iron on hand in such quantimunity raised its own food, and made its ties that they would be able to supply an occurr own clothes and implements. Is there, then, no prospect for uniformity in our classifications? A suggestion of imow be carried into effect with a more reaportance comes from our transcontinental sonable outlay of capital. In the natural however, steam be blown in below the sursystems. While adhering to the Western gas districts, for instance, it would be an face of the water, a bubble will be formed,

In a recent lecture on this subject at the Royal United Service Institution, in London, England, by Captain Fitzgerald, R. N., the lecturer said that, though he was of opinion that it would be advisable to unrig immediately all the present ironclads, yet he considered that the carrying out of this idea would be more applicable to future designs for cruisers than to the unrigging of the present single screw corvettes. He maintained that there was no economy in having masts and sails, as these wore out rapidly and did not save coal, as they stopped the ship more in foul winds than they assisted her in fair. He pressed that the present fighting machines without their spars and rigging than with them, leaving in their lower masts and turning the tops into small In a recent lecture on this subject at the rigging than with them, leaving in theilower masts and turning the tops into smal machine gun batteries. The principal arguments for the abolition of spars and sails in men of-war, but more particularly in iron clads, were that the weight of masts an sails caused increased immersion and occupie valuable space both ou deck and belowspace which might otherwise be devoted twarlike stores. They masked, more or less the fire of guns. There was a probability owreckage from them fouling the screw in action, and lastly, though perhaps the strongest argument of all, was the fact that the retention of masts and sails in men-of war diverted so much of the attention, the war diverted so much of the attention, the energy and the resources of both officers and men from the real work of their professio and from the study of modern naval wa and from the study of modern naval was fare, and occupied them in drills and execises as obsolete for fighting purposes as the bow and arrow drill of the Saxons. It was said that a ship's company which was smar at drill aloft was sure to be smart in every thing else. This might be true in som cases, but even if it were so it did not furnish any sufficient argument for keepings. nish any sufficient argument for keeping usail drill. The lecturer discussed at lengthe objections which would be made to the principles he enunciated, and he claim that whatever risks there might be in h proposals, these risks were such as occurr even in the carrying of gunpowder, and t necessity of change must be recognize The duty now before the country was not The duty now before the country was now build ships to suit the seamen, but to train the seamen to suit ships in which were the useful inventions of modern time and the seamen to suit ships in which were the useful inventions of modern time and the learnshaw, E carrishaw, E core, tons, 350

#### Electrical Conductivity of Metals.

is taken as 100;	
Names of Metals.	Conducti
Silver, pure	
Copper, pure	
Copper. pure, super-refined and	crystallized.
Silicon bronze, telegraphic	
Copper and silver alloy at 50%	
Gold, pure	
Silicon copper, 4% of silicon	
Silicon copper, 12% of silicon .	
Aluminium, pure	
Tin, with 10% of sodium	
Silicon bronze, telephonic	
Plumbiferous copper, with 10s o	of lead
Zinc, pure	
Phosphor-bronze	
Silicon brass. with 25% of zinc	
Brass, with 35% of zinc	
Phosphor-tin	
Gold and silver, 50% each	
Swedish iron	1
Banca tip, pure	
Antimonous copper	1
Aluminium brocze, 10% Al	
Cadmium amalgam, 15% Cd	
Siemens steel	1
Mercurial bronze	
Platinum, pure	1
Arsenical copper, 10% arsenic	
Lead. pure	
Bronze, with 20% of tin	
Nickel, pure	
Phosphor-bronze, 10% tin	
Phosphor-copper, 9% phosphorus	
Antimony	

#### Water Rams in Steam-Pipes.

Mr. Charles E. Emery, chief engineer of A wide-awake Chicago agent for an exten-sive sheet-iron mill has an excellent scheme his recent lectures on "The Transmission of number of the Stevens Indicator Mr. Emery is quoted as follows:

The principal cause of accidents in the operation of large, long steam pipes arises from the presence of water. If steam be filled with cold water, condensation will take place until the surface is somewhat heated, and this, in connection with a cloud which forms above the surface, will retard rapid condensation, so that in due time the full steam pressure can be maintained above water cold at the bottom. This phenomenon is not an infrequent occurrence in boilers in which the circulation is defective. It is, therefore, perfectly safe to heat up any vessel containing cold water, if the steam can be admitted from the top upon the surface of the water and so maintained. If,

able to supply a demand which has heretofore arisen when they are least able
to take advantage of an opportunity to
secure better prices than those at which
they are forced to take long-time
contracts. The prompt shipments that
could be made under such circumstances
would also help them very much in securing
a regular class of customers. There are
many other advantages in this scheme
which would seem to make it attractive to
sheet-iron manufacturers, and it is somewhat
singular that it has not yet been carried into
effect by some of our most enterprising establishments.

Mastless Men-of-War.

Mastless Men-of-War.

what is called a water ram. In blowing
into a large vessel, these explosions occur in
the middle of the mass, and create simply a
series of sharp noises. If, however, ste un
be blown into a large inclined pipe full of
water, it will rise by difference of gravity
to the top of the pipe, forming a bubble as
previously stated; and when condensation
takes place, the water below the bubble will
rush up to fill the vacuum, giving a blow
directly against the side of the pipe. As
the water still further recedes, the bubble
will get larger, and move further and
further up the pipe, the blow each time
increasing in intensity, for the reason that
the steam has passed a larger mass of water,
which is forced forward by the incoming
steam to fill the vacuum.

#### Imports.

The following were the Imports of Hard etals into the Port ending May 10, 188 Steel.

he	and total winds, were	
lea	ware, Iron, Steel and	Metals into the Porto
	New York for the wee	k ending May 10, 1887
the	Hardware.	Steel.
in-	Boker, Hermann & Co.	
ng	Mdse., cs., 2	Abbott, Jere. & Co. Wire, coils, 31,011
	Arms, cs., 9	Baring Bros. & Co.
dly	Curley J. & Bro.	Billets 7650
the	Cuttery, case, 1	Billets, 7650 Slabs, 10,749
ted	Duna John,	Bess, Slabs, 2562
ent	Mach'y, es., 2	Slabs, pes., 1550
ful	Field, Alfred & Co.	Billets, pcs., 1801
nd	Cutlery, cs., 15 Mdse., cs., 75 Folsom, H & D.	Boker, Carl F.
	Muse., cs., (i)	Mdse., cs., 1 Downing, R. F. & Co.
eir	Arms, es., 3	Bdls., 226
all	Frasse, P. A. & Co.	Plates neg 444
gu-	Mdse., case, 1	Plates, pcs., 444 Germania Bank of Lon
in	Kastor, A.	don,
on-	Cutlery, cs., 6	Oil Barrel Hoops,
	Packages, 2	63.00
ind	Lau, J. H. & Co.	Heyn, Alfred,
ied	Arms, es., 2 Lewis & Conger,	R.ds. bdls., 4316
-	Lewis & Conger,	Lalance & Grosjean.
to	Casks, 4 Case 1	Sheets, bills. 119 Merchants' Desp'h Co.
88.	Molius, Jose S	Rdle 30
of	Mach'y, case, 1	Bdls., 30 Bars, 8
	Montgomery & Co.	Cases, 1
in	Casks, 4	Moore, J. B. & Co.
he	Newton & Shipman.	Sheets, 693
nat	Files, cks., 4	Naylor & Co.
of-	Rigny, A.	Crop ends, lot, 1
the	Sack & Richmond,	Bars, 2830 Shaota bulla 218
nd	Nails, eks., 2	Sheets, bdls., 248 Newton & Shipman,
	Shattuck & Binger.	Bundles, 172
on,	Packages, 2	Bars, 21
ar-	Wiebusch & Hilger,	Cases. 4
or	Chains, cks., 27	Forgings, 40
he	Mdse., cs., 10	Pilditch, F. S.
8.8	Arms, cs., 14	Mdse., cs., 173
irt	Witte, John G. & Bro. Mdse., case, 1	Wagner, W. F. Packages, 169
	Order.	Bundles, 185
ry-	Mach'y, es., 5	Bars, 74
me	Hdw., bags, 110	Cases, 48
ır-	Cutlery, case, 1	Plates, 68
up		Webb, J. B.
th	row.	Boiler flues, 4
		Order,
he	Abbott Jere & Co.	Bands, 373 Bars, 46
ed	Spiegel, tons, 750	Case, 1
his	Baring Bros. & Co.	Forgings, 6
ed	Rods, kgs., 3951	Skeps, 9
he	Crocker Bros.	Rollers, 6
d.	Ferromanganese.	Rails, 1500
	Pig. tons, 215	Rods, bdls , 2279
to	Spiegel, tons, 131	Forgings, es., 18
iin	Spiegel, cks., 90	Plates, 125
he	Drexel, Morgan & Co. Pig. tons. 310	Old spring, tons 400 Billets, Slabs, &c.,
he	Pig. tons. 310	600
	Earnshaw, E	Rods, pkgs., 14,966
	Ore, tons, 350	Packages, 230

Ore, tons, 450	Packages, 230
rie Disp. Company.	Crop ends, tons, 195
Pig, tons, 150	the property of the same to the
roment F S.	Metals.
Bundles, 400	ALCOHOLD .
enderson Bros.	Brown & Tauso,
Pig. tons, 300	Zinc Plates, 200
ee, Jas. & Co.	Bruce & Cook,
Pig, tons, 100	Tin plates, bxs., 754
aylor & Co.	Terne plates, bxs.,
Wire rods, coils, 26,-	3100
528	Byrne, Jos. & Son,
Rods, pkgs, 18,186	Tin plates, bxs., 300
etson, Geo. W. & Co.	Drexel, Morgan & Co.
Pig. tons, 100	Tin plates, oxs., 5009
rder.	Drexel & Co.
Rings, bdls., 34	Tin plates, bxs., 817
Old rails, tons, 4542	Gould, R. S.
Old rails, pes., 14,603	Brass foundry es,10
Reams, 524	Lazard Bros.
Plates, 1933	Tin plates, bxs., 938
Rods, pkgs., 16,638	Mersick, C. S. & Co.
Wire, bdls., 17,6-5	Terne plts., bxs., 220
Pig. tons. 160	Phelps, Dodge & Co.
Spiegel, tons, 1751	Tin plates, bxs12,000
Old fron, tons, 54514	Black taggers, bxs.,
Bar. 1060	168
Rollers, 90	Order.
Rings, 40	Tin plates, bxs., 20, 228
Ore, tons 500	Antimony, es., 59
Heavy wrt., scrap.	Tin and Terne
lot. 1	plates. bxs., 807
Old rails, 1926	Terne plates, bxs. 886
Drums, 8	Nickel, pkgs., 15
Wrought pipes, 20	Tin slabs, 300
are to the factor of	a and the country of the country

Rings, 40 Ore, tons 500 Heavy wrt., scrap. lot. 1 Od rails, 1926 Drums, 3 Wrought pipes, 20 The imports of Cutlery, Hardware, and Metals at this port during the week ending May 6 were as follows:

Ag. imp.,pkgs 5 Hdw., case. 1

Hdw., case. 1

may o were no ronows.		
	Quantity.	Value.
Anvils	. 57	\$800
Antimony ore	137	1,600
Brass goods		1,545
Bismuth	1	365
Bronzes	14	1,086
Chains and anchors	31	1,851
Clocks	29	1,935
Copper		119
Cutlery		13,473
Dutch metal,	\$33	8,911
Guns	42	4,754
Hardware	12	E,058
Iron hoops, tons	25.2	690
Iron, pig. tons	4,620	70,827
Iron, sheet, tons	26	2,022
Iron, spiegel, tons	3,638	HS, \$2H
Iron ore, tons	791	1,432
Iron, tubes	8	RH.
Iron, other, tons	7,015	120,850
Machinery	54	6,073
Metal goods	475	22,050
Nails	1	25
Needles	12	4,278
Old metal		2,776
Platina	2	24,097
Steel	68,882	89,5K3
Tin, bxs	45,712	174,227
Tin, slabe, 3,621; 16		56,947
Wire	4:2%	2,768
Zinc, th	5694	51
Zinc, oxide	350	2,760

Hdw., Mach Mr. W. H. Sills, 118 Lake street, Chicago, has been appointed agent for the sale of the Acme elbow, with the exclusive con-trol of sales in Chicago and St. Louis. This elbow is manufactured by the Acme Elbow Company, of Milwaukee, Wis, and is made of one piece of iron bent into the proper shape, Mr. Sills has also made arrange-ments to carry in stock a full line of the stamped and pieced tinware manufactured by Messrs. Matthai, Ingram & Co., of Baltimore, Md., selling exclusively to jobbers and not to the retail trade.

Gerhard Krüss has determined the atomic systems. While adhering to the Western gas districts, for instance, it would be an classification generally, they have adopted a easy matter to erect a warehouse which special commodity tariff in which the would have a cemented floor and be heated Pacific specialties are given rates which with natural gas to an even temperature at will enable them to be sold in distant marall times, thus guarding against dampness or other causes of deterioration in the sheet should agree upon some general schedule, iron. Manufacturers who would provide would it not be possible to secure a general to erect a warehouse which will enable with a blow, forming the atomic design in size until its surface becomes sufficiently extended to condense the steam more rapidly than it can enter, when a partial vacuum will be created, the bubble will collapse, and the water flowing in from all sides at high while the minimum was 196.619. He restored to secure a general the atomic weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle weight of gold by the analysis of neutral triangle and the atomic decomes at finite and the atomic triangle and triangle and Mach'y, pkge.

#### Exports.

in	Exp	orts.
8		presents the exports of
m	Hardware, Iron, St.	eel, Metals, &c., from rk, for the week end-
tv	ing May 10, 1987;	rk, for the week end-
as	Dutch West Indies	Havre.
on	Quan. Val.	Quan Val
ill	Quan Val. H dw. pkgs. 22 26 Mf. tron. pke. 1 Clocks, csc. 1 Wash. mach.	Cop plates. 9 178 Pumps, pkgs. 5 400
AR	Clocks, cse 1	Copper, ck 4 91 12 125
le	Wash, mach,	Copper, bars 9 121
rd	Wash mach, case 17 Tinware, cs. 4 17 Dutch East Indies,	Copper, ck4 91 12 125 Mach'y, pkgs 47 19 183 Copper, bars 9 121 Ag imp., pkgs 713 18,649 Hdw., cs. 53 825
at	Pumps pkge 1 15	Bordeaux.
r,	Pumps, pkge 1 15 Clocks, cs 42 163	Ag.imp.pk.s 10 223
ng	Ag. imp. pkgs 39 2,780	Nails, kegs 5 15
	Staranger.	Mach'y, pkge. 1 165
	Mach'v. pkes 2 450	Venezuela.
	Hamburg.	Cutlery, cs. 10 259 Hdw., pgs. 41 380 Brass goods,
	MARKEL STATES	Brass goods,
d- of	es	Case 38 174 988 Mails, es. 441 Clocks, es. 4 31 Sew. ma., es. 15 1,787 Mehv, pkgs 10 550 Clocks es. 4 115
7.	Pumps, pkgs 4 141	Clocks, es. 1 31
	Ag.imp., pk rs 201 3,815 Clocks, pkgs. 93 2,920 Mach'v. pkgs 24 2,332	Mehv. pkgs . 10 550
	Mach'y, pkgs 24 2,332 Sew. ma., es., 252 4,307	
	Copper matte bgs 213 (13,125	D maril
	Bremen.	Ag.imp., pkgs 29 46.
	Mf. iron, pkgs 6 204	Cutlery, es. 13 794
	Mach'y, pkgs. 2 75 Pumps, pkgs. 3 70	Pumps, pkgs 21 1,151 Cartridges, es 20 550
	Ag. imp., pkgs 2 65	Wash much 3 112
	Sew. ma., es 3 201	Agate-ware,cs 23 824
	M. ron, pkg., 1 3	Stetmer. 1 21,278 Guns, case. 1 102 Mach'y, pkgs. 199 6,871
n-	M. ron, pkg 1 3 Hdw., es 9 135	Mach'y, pkgs. 199 6,871 Clocks, pkgs. 199 6,871
s.	Stuttgart.	Clocks, pkgs 42 1.146 Mf.iron,pkgs, 129 1.235
	Mf. iron, pkgs 21 2,407 Leipsic.	Mf.iron,pkgs, 129 1,235 Stimp'd ware cs
	Printing or's	es
	pkgs	Arms, es 10 853
	Ag.mp., pkgs 6 210	Cop. gds., cs. 2 24 Arms, cs. 10 853 Hdw., pkgs. 226 2.816 Tinware, cs. 2 25 Locomotives 2 11,920
	Liege	United States of
	Guns, es 9 945	Colombia.
	Rostoff. Ag imp., pkgs 14 101	Hdw., pkgs 96 1,992 Mf. iron, pkgs 294 3,393
	Moscow. Mach'y, pkgs 2 275	Arms, case. , 1 118 Spikes, kegs 1 23 Tinware cs. 44 1,514 Ag.imp., piggs 8 82 C p. tubes.cs. 3 356 Shot, pgs. 4 24 Jacks 60 820 B. ass g'ds. cs. 83 204
	Gottenburg.	Ag.imp., pkgs 8 82
	Ag. imp.,pkgs 9 324 Clocks, pkgs 29 530	Shot, pgs. 4 24
	Hdw., es 44 641 Arms, case 1 47	B. ass g'ds. es. 83 204
	Stockholm.	Babbitt metal,
	Pumps, pkgs., 2 60	Copper still 1 337 Cutlery, pkgs. 40 655 Mach'y, pkgs. 88 5,641
	Clocks, es 16 431 Amsterdam.	Mach'y, pkgs. 88 5,611
	Pumps, pkgs 10 3:5	w goods, cs. 6 188
	Hdw., cs 27 416 Mach'y, pkgs. 16 1.118 Ag.imp.,pkgs. 5 149	Cartridges,es. 4 238
	Ag.imp.,pkgs. 5 149	Naits, kegs 21 60 Mt. zine, pkgs 50 2,167
	Mf. iron, pkgs 8 45	Pumps, pkgs. 3 27 Fer, caps, es 3 519
	Mach'y, pkgs 14 2,781	Mt. lean, page 1 55
	Copper ore.	Steel, pgs 8 174
	Copper, cks. 36 ,500	Clocks, pkgs, 18 428 Copper times,
	Boiler tubes . 137 69 Chains, cse 1 531	Ibs2974 518 Genoa.
101	Iron drums. 66 660	Clocks, es 3 77
**	Clocks, pkgs. 123 3,880 Copper matte bags 8073 14.045	Met. ware, ose 1 66
	Tinware, case 1 20	Mr iron.pkgs. 7 16 Hdw., ese 1 51 Sew. ma., es 51 586
5	Sew. ma., cs., 13 1,191	Palermo.
	Copper, cakes and 11,252	Clocks, es 9 159 Hdw., ese 1 6
	Copper, ptgs.1415 20,511	Ag.imp., pkge   2 Brit. ware, cse   106
	Hdw., pkgs 6 114 White metal, 6 130	Central America.
,	es 6 130 Mf. iron, pkge 1 10	Iron beams 26 759
	Ag. imp., okgs 6 810	Ag. imppkgs 9 88 Cartridges,
	Oxide zinc. bbls 140 1,194 Beef, pails 500 1,068	Rivets, cs 1 98
9	Beef, pails 500 1,068 Nails, pkgs1235 5,000	Tanasana ma 150 150
1	Antwerp.	Tacks, cs 2 50 Tinfoil, bxs 2 18
0	Hdw., es 9 250 Sew. ma., es., 302 4,658	St el, odls 19 340 Neils, kegs 11 51
4	Mach'y, pkge 1 571 Aron mouth.	Boiler 1 278
0	Hdw., es 10 3)	Hdw., pkgs 164 2.875
0	London.	MCiron, pkgs 625 4,568 Cuttery, pkgs 28 963
	Guns, pkgs 180 270 Mf. iron, pkge 1 10	Quick silver.
8	Ag. imp.,pkgs 34 855 Pumps, pkgs. 2 40	flasks 65 2,562 Car wheels 8 100
1	Mach'v nkys 23 558	Agateware,cse 1 16 Copper, box. 1 60
	Clocks, pkgs. 287 5,445	Iron, pkgs 86 409
6	Hdw., es 804 8,165 Sew. ma., cs 117 1,557	Dreige   1 15,000
	Leith.	Lead, rolis 3 81 Nails, es 3 37
i	Hdw., case 1 31	. Nuples.
5	Hull.	Hdw., es 13 314

Huw, case		*********		Marsher en	25			
Hdw., case		Ag. imp. pkgs 5 2	300	Nails, cs				
Hull.  Hdw., cs. 40 713 Clocks, pkgs. 10 135 Ag,imp., pkgs. 13 452 Mf. iron, pgs. 2 40 Relfast. Sew. ma., cs. 25 875 Dublin. Hdw., cs. 2 110 S. iron, pkgs. 31 3.66 Gibrattar. Clocks, bxs. 28 500 British East Indies. Clocks, cs. 35 588 Canada. Metal goods. cs. 3 5 588 Canada. Metal goods. cs. 3 5 588 Gibrath Honduras. ridw., pkgs. 12 173 Mach'y, pegs. 3 178 Mach'y, pegs. 3 178 Mach'y, pegs. 3 178 Mach'y, pegs. 3 178 Saws, cs. 12 222 Cuttery, cs. 4 105 Tinware, case. 1 105 Tinware, case. 1 106 Rev. ma., cs. 5 1888 British Australia. Hdw., pkgs. 30 1,3 Sew. ma., cs. 75 885 British Australia. Hdw., pkgs. 22 Cuttery, cs. 4 105 Tinware, case. 1 207 Mach'y, pkgs. 30 1,3 Sew. ma., cs. 5 1888 British Australia. Hdw., pkgs. 29 10,944 Mach y, pkgs. 38 21,938 Clocks, pkgs. 40 75 Saws, cs. 12 223 Mirron, pkgs. 7 5 Saws, cs. 12 225 Wirron, pkgs. 3 177 Saws, cs. 12 225 Wirron, pkgs. 3 3 177 Saws, cs. 12 225 Wirron, pkgs. 3 3 3 3 3 3 3 4 3 4 4 5 3 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 4 5 4 4 4 5 4 4 4 5 4 4 5 4 4 5 4 4 4 5 4 4 5 4 4 4 5 4 4 4 5 4 4 4 5 4 4 4 5 4 4 4 5 4 4 4 5 4 4 4 5 4			31	. Nuple	$H_{+}$			
Clocks, pkgs. 10 135 Ag_imp., pkgs. 4 Ag_imp., pkgs. 13 422 Macn y, pkgs. 6 Mf. iron, pgs. 2 40 Macn y, pkgs. 6 Mr. iron, pkgs. 31 42 Macn y, pkgs. 6 Macn y, pkgs. 6 Macn y, pkgs. 6 Macn y, pkgs. 6 Macn y, pkgs. 31 36 Gibrattar.  Clocks, bxs. 28 500 British East Indies, Clocks, cs. 35 588 Canada.  Metal goods, cs. 35 588 Canada.  Metal goods, cs. 35 12 British Hondaras, ridw., pkgs. 12 173 Mach y, p. gs. 3 178 Saws, cs. 2 22 Cuttery, cs. 4 105 Nais, kegs. 3 118 Ww., pkgs. 40 18 Sew, ma., cs. 5 10 Clocks, pkgs. 58 21 33 Sew, ma. cs. 75 88 British Australia. Hdw., pkgs. 925 16,964 Macn y, pkgs. 58 21,938 Clocks, pkgs. 58 21,938 Sew, ma., cs. 5 1 Clocks, pkgs. 58 21,938 Sew, ma., cs. 5 1 Sew, ma., cs. 5 1 Sew, ma., cs. 5 1 Sew, mills, pkgs. 21 77 Saws, cs. 12 223 Sws. cs. 12 223 Swy. gs. 13 323 Arms cs. 11 445 Mr. iron, pkgs. 3 13 Arms cs. 11 445 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 141 Arms cs. 11 446 Mr. iron, pkgs. 3 144 M				Hdw., es	13	-3		
Clocks, pkgs. 10 135 Ag, imp., pkgs 4 Macny, pkgs 5 W. How, es 25 875 Dubtin.  Hdw., es 2 110 S. tron, pkgs 31 366 Gibrattar. Clocks, bxs. 28 500 British East Indies, Clocks, es 35 588 Canada. Metal goods, 2 5 586 Canada. Metal goods, 3 12 British Honduran. idw., pkgs. 12 173 Machy, pkgs. 12 173 Machy, p. gs 3 175 Nails, kegs. 3 31 175 Nails, kegs. 3 31 175 Nails, kegs. 4 105 Nails, kegs. 4		Hdw es 40 7	133	Leghur	11.			
Ag. imp., pkgs 13 432				1	4	21		
Mr. iron, pgs. 2   10   Rome.		Charles I. william			45	1		
Rome	4	walking but breeden						
Sew. ma., cs. 25 875		tore to and plants						
Dublin				Hdw., es .	39	3.3		
Hdw., cs				Triente				
Hdw., cs.   2   110   S. iron, pkgs   31   365     Gibraltar.   Clocks, bxs.   28   500     British East Indies., Clocks, cs.   35   588     Canada.   Metal goods,   3   12     British Honduras.   14   16   17     Buritsh Honduras.   15   173     Mach' y, pkgs.   12   173     Saw, ma., cs.   1   267     Saws, cs.   2   22   2   2     Cuttery, cs.   4   4   105     Timware, case.   1   10     Lyons.   16   10     Hdw., pkgs.   93   13     Sew, ma., cs.   5   85     British Austratia.   14     Hdw., pkgs.   93   323     Clocks, pkgs.   33   323     Mach' y, pkgs.   39   13     Kendon, pkgs.   30   13     Saws, cs.   12   23     Saws, cs.   12   23     Arms   cs.   17   17     Saws, cs.   12   23     Arms   cs.   17     Saws, cs.   17   17     Saws, cs.   12   23     Arms   cs.   17   140     Ag, imp.,pkgs.   100     Mit iron, pkgs.   3   12     Mit iron, pkgs.   3   13     Mit iron, pkgs.   3   14     Ag, imp.,pkgs.   100     Mit iron, pkgs.   3   12     Hdw., cs.   2   14     Hdw., cs.   3     Sew, ma., cs.   5     Mit iron, pkgs.   3     Mit iron, pkgs.   3     Mit iron, pkgs.   3     Hdw., cs.   2     Hdw., cs.   3     Hdw., cs.   4     Hdw., cs.   17     Hdw., cs.   17     Hdw., cs.   17     Hdw., cs.   17     Hdw., cs.   2     Hdw., cs.   3     Hdw., cs.   17     Hdw., c	1	Dublin.		Sew ma es	4			
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Clocks, cs.   35   588     Canada	1			Mach'y, pkgs.	15			
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Metal goods,	1	Camping Coll.	963	Hdw., es	17	21		
Metal goods   12   13   14   15   15   15   15   16   16   16   16	1			Argentine Republic				
British Honduras.   Idw., pkgs.   12   173   Mach'y, p*gs.   3   178   Mach'y, p*gs.   3   178   Mach'y, p*gs.   3   178   Mach'y, p*gs.   3   178   Mach'y, pkgs.   30   1,3   188   Mach'y, pkgs.   32   160   Mach'y, pkgs.   58   Clocks, cs.   2   170   Tubes.   12   188   Mach'y, pkgs.   58   1,3   188   Mach'y, pkgs.   59   1,3   188   Mach'y, pkgs.   30   1,3   Mach'y, pkgs.   30	1				,			
British Honduran,   Ag. mp.,bgs   12	ı	C8 8 1	.5					
ridw, pkgs.   12   173	1	British Honduras.						
Mach'y, p-gs.   3   178   Revador.     Nails, kegs.   3   31   Mach'y, pkgs.   36   1,3     Sew. ma., cs.   1   267   Hdw., pkgs.   36   1,3     Sew. ma., cs.   1   267   Hdw., pkgs.   36   1,3     Cutlery, cs.   2   20   Cutlery, cs.   5   4     Lyons.   885   Clocks, cs.   2   3     Mach'y, pkgs.   938   21,338     Mach'y, pkgs.   538   21,338     Mach'y, pkgs.   538   21,338     Mach'y, pkgs.   538   21,338     Mach'y, pkgs.   538   21,338     Millon, pkgs.   25   3     Sew. ma., cs.   5     Cutlery, cs.   9     Cutlery, cs.   9     Cutlery, cs.   9     Cutlery, cs.   3     Mach'y, pkgs.   33   343     Mach'y, pkgs.   36   34     Millon, pkgs.   36   34     Millon, pkgs.   36   34     Arms. cs.   11   44     Ag. imp., pkgs.   368   22,671     Hdw., cs.   2     Hdw., cs.   3     Hdw., pkgs.   36     Hdw., pkgs.   36	Î	eldw nkgs 12 17	3			44		
Nais, kegs.   3   31   Sew. ma., cs.   11   267   Hdw., pkgs.   30   1.2   Sew. ma., cs.   12   267   Hdw., pkgs.   30   1.2   Saws, cs.   2   22   Cuttery, cs.   3   4   Thuwre, case.   1   10   Rass goods.   2   Thuwre, case.   1   10   Rass goods.   2   Rottish Australia.   Fron tubes.   12   12   Saws, cs.   12   23   Sew. ma., cs.   5   Clocks, cs.   2   Fron tubes.   12   Sht. iron, pkgs.   7   Saws, cs.   12   23   Sew. ma., cs.   5   Cuttery, cs.   5   Cuttery, cs.   6   Cuttery, cs.   7   Cu	l			Ecuador				
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Nails, cs 74 1/21	Mexica.
Sew. ma., cs. 4 247 Steel, bars. 445 31.163 Cattridges, 18 275 Hong Kong.	Hdw., pkgs. 121 2,458 Ag imp., pkgs 74 933 Nails, kegs. 15 84 Mach'y, pkgs 72 3,621 Metal goods.
Clocks, pkgs   150   3,040   Mf. iron, pkge   1   5   Hdw., cs 9   272	cs
British West Indies.	Clocks, es 7 150
Mf. iron.pkgs. 67 664 Hdw., pkgs 82 2.0 Nails, kegs. 109 365 Pumps, pkgs. 10 113	Gun primers, case 1 100 Primed shells 33 1.858 Cartridges.
Clocks, pkgs. 9 94 Revolvers.cse I 66	es 91 1.821 Per caps, es. 8 861
Sew. ma., cs. 14 158 Cartridges,	Mt. iron, pkgs 755 4.523 Pumps, pkgs 35 4.524







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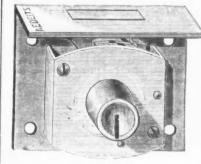
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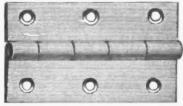


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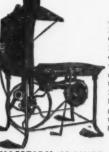
out.

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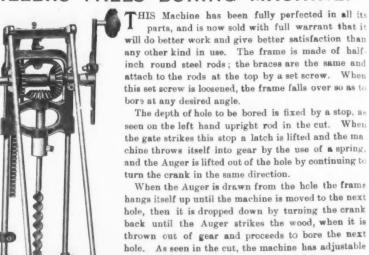
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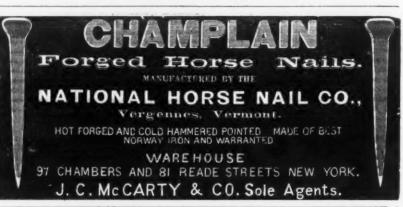
cranks which fully regulate its speed and power.

Machine, without Augers, - \$7.50 Augers in sets, 18, 23, 41 quarters. \$3.00. \$3.75. \$6.75.

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No Box Frames, No Weights, No Cords, No Pulleys.

Balances the sash perfectly, and runs as easily as weights. Can be easily applied by any mechanic

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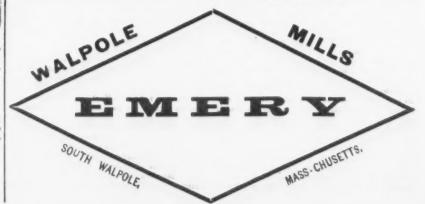
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#### MANUFACTURING.

#### Iron and Steel.

Among the new iron enterprises that are being attracted to Findlay, Ohio, by its abundant supply of natural gas is the Findlay Iron and Steel Company, recently organized by Mr. W. H. Carruthers. Ground has already been broken for the buildings, and most of the machinery is on hand. The ompany will put up a first class forge train, will begin with a 10 inch finishing guide a. The products will be horseshoe iron, small rods, squares, flats, ovals, bands, angles, small channels and other extra shapes, to be made from wrought scrap iron

Graff, Bennett & Co., of Pittsburgh, will soon commence to build a new puddling department of about 30 furnaces in connection with their iron mill at Millvale.

The Union Steel Company, of Chicago, shut down their steel and rail mill on the 5th inst. Seven hundred and fifty men were locked out on the strength of a strike of 28 drillers, clippers and filers. The 28 men struck for some trivial cause, and the gen-

Furnace E, of Carnegie, Bros. & Co., at Braddock, Pa., was blown out last week on account of the coke strike. Should it continue, more of their furnaces will be blown out. The company have a large amount of metal on hand, and the rail mill will keep running, as usual.

The American Bridge Works, of Chicago, owned by the Chicago Forge and Bolt Com-pany, were burned on the evening of the 2d inst. The works were situated at Fortieth street and Stewart avenue, and covered nearly 5 acres, comprising a machine shop, blacksmith shop, riveting shop, templet shop point shed and foundry, all separate build ngs. The loss will approximate \$100,000, partly covered by insurance. A large quantity of fine machinery was destroyed, and a number of partly completed bridges were injured, among them being 33 bridges for the new Chicago branch of the Atchison, Topeka and Santa Fé Railroad. These works were formerly known as the Boomer Bridge Works, and they were purchased in 1885 by the Chicago Forge and Bolt Company. The fire has occurred at a very unfortunate time for the owners, who have a large number of contracts for bridges, which they will now be obliged to transfer to other works, pending the rebuilding of their bridge department. The forge and bolt works of the company were not injured, and are still in

On the 6th inst, the entire establishment of the Beaver Falls Iron Company, at Beaver of their Champion lever blowers and longer falls, Pa., shut down on account of the a full line of power blowers, exhaust fans, stationary forges, drill presses and tire management refusing to provide the sheet-rollers with a "doubler," according to the rules prescribed by the Amalgamated Association. The mills were turns of eight hours each. The mills were running on three

It is stated on good authority that the firm of Graff, Bennett & Co., of Pittsburgh, who some four years ago failed for about \$1,000,-000, would within a short time liquidate the entire indebtedness. Ever since the failure the firm have been meeting their obligations as fast as they matured until now the habilities amount to only \$600,000, two thirds of which is held in and around Pittsburgh This will be paid by the 20th prox., and Graff, Bennett & Co. will again stand in the commercial world perfectly solvent and free from all obligations

At the plant of the Wheatland Rolling At the plant of the wheatland Rolling Mill Company, at Wheatland, Pa., which recently resumed operations after an idleness of some years, all the puddling furnaces, 13 double, equal to 26 single farnaces, and all the rest of the mill available, are in operation, making pipe iron. Several of the heating furnaces are being changed to pudding furnaces, and the rest of the mill

It is said that a number of furnaces in the Mahoning Valley, Ohio, will be compelled to bank up this week on account of the coke

Hussey, Howe & Co., Limited, of Pitts-

and put in first-class repair immediately. The Gordon-Whitwell stoves, just put in commission, work well, and Furnace No. 2 is turning out a larger amount of pig than

Struthers Furnace (Coke), in the Mahoning Valley, Ohio, was blown in on the 5th inst., after being thoroughly repaired.

The Pittsburgh Steel Casting Company, of Pittsburgh, closed down their works on the 7th inst., for the purpose of making repairs. The stoppage will last for about two months and throws 200 men out of employment.

Mr. M. V. Smith, metallurgical engineer, of Pittsburgh, has been awarded the tract for the four-hole soaking pit and artificial gas producers for the North Branch Steel Company, at Danville, Pa.

The Norton Iron Works, at Ashland, Ky. have just awarded a contract for the erec of a 200-ton steel plant.

The steel melters at the Black Diamond Steel Works, Pittsburgh, have been promised an increase of \$1 more on the ton their work on and after the next pay day, May 15. The advance is entirely voluntary on the part of the firm and unsolicited by the men. The works are with great diffi-culty filling the long list of orders, as they are coming in with such rapidity.

appears, had not been swabbed entirely dry before it was used, and the molten steel caused a sudden conversion of the water into steam, which blew out the steel and threw it over the persons of the workmen stand ing near. Two men were burned very se verely and possibly fatally.

We take the following from an exchange Messrs Julius Severin & Son have bought the "Old Mill," at Aurora, Ind., and intend to make sheet iron in it on a small scale

It is said Newark (Ohio) capitalists are looking out for a location near Greensburg, Westmoreland County, Pa., on which to erect a large iron mill and boiler works, which are to employ over 200 hands.

The Glamorgan Works, of Lynchburg, Va., of which W. H. Wren is president, R. W. Crenshaw vice president, and H. E. McWane is general manager, have purchased the patterns of the Lynchburg Iron Company. The company have the contract for the new furnace of the Lynchburg nail works, with the exception of the engine.

#### Machinery.

James F. Hotchkiss, maker of the wellknown mechanical boiler cleaner, has removed to 120 Liberty street, New York. The seventeenth edition of his catalogue has

The Lovell wire-nail machine, which ems to have attracted so much attention in England, is used in the works of the Albert Nail Company, in Monroe street, New York.

The Mellert Foundry and Machine Company, of Reading, Pa., have issued a new catalogue illustrating and describing their specialties. These embrace water and gas pipes, stop valves, fire hydrants, car and railroad castings, &c., and the Canada tur-

The Hazelton Boiler Company, 716 to 720 East Thirteenth street, New York, are completing a brick shop, 40 x 100 feet, a little further down the street, as an addition to existing facilities. Excepting a couple of Betts radial drills bought for their own use, then have hitherto bired their boiler shop. they have hitherto hired their boiler shop tools from the Quintard Iron Works. Now they have ordered a complete outfit of new boiler shop tools from Hilles & Jones, greatly increasing their facilities. The new tools are now being put in place in the new shop.

William Deering & Co., of Chicago, builders of harvesting machinery, have sent

The Champion Blower and Forge Company, of Lancaster, Pa., are sending out a new illustrated catalogue. The company,

Locomotive and machine shops are to be built at Marshall, Laredo, and San Antonio, Tex., to supply locomotives and machinery and railway appliances for the railroads in that State

Messrs. Byram & Co., Detroit, Mich., are furnishing their "Colina" Cupolas to the Schenectaday Locomotive Works, Schenectady, N. Y.; Bement, Miles & Co., Philadel phia, Pa.; The J. Morton Poole Company, Wilmington, Del.; and the Jackson & Woodin Mfg. Company, Buswick, Pa.

The Abendroth & Root Mfg. Company, of New York, have just received a large order The Abendroth & Root Mrg. Company, or New York, have just received a large order income is \$16,000. The debt of the company from the Southern Cotton Oil Company for their water tube boilers, about 4000 horseper cent. is being paid monthly. their water tube boilers, about 4000 horse-power in the aggregate. These boilers will be erected for the oil factories at Houston, Texas; New Orleans, La; Little Rock, Ark.; Atlanta, Ga.: Savannah, Ga.; Wilmington, N. C., and Montgomery, Ala. This is among the largest orders for steam generators ever

The Betts Machine Company, of Wilmingpudding furnaces, and the rest of the mill is being changed as rapidly as possible to the same purpose. It is expected that the whole works will be in operation and making pipe iron by the 1st of July.

In the betts machine Company, of Wilmington, Del., are just finishing a large planing machine for the Columbus Machine Company, of Columbus, Ohio. It will plane 6 feet graph of the company of Columbus, Ohio. It will plane 6 feet graph of the company of Columbus, Ohio. on the crosshead, and a side tool on each upright, making four tools in all. Weight

over 64,000 pounds. The Korting Gas engine Company, Limited, have been organized under the laws of the State of New York to build the Korting gas engines. They are putting up a factory with wide variations in the charge of powder, and experiments with a 6-inch control of the gas and the object of the arrangement is to accompanie to the control of the garden and the object of the arrangement is to accompanie to the control of the grand the control of the garden and the object of the arrangement is to accompanie to the control of the garden and the object of the arrangement is to accompanie to the control of the garden and the object of the arrangement is to accompanie to the arrangement is to accompanie to the arrangement is to accompanie to the garden and the object of the arrangement is to accompanie to the control the recoil of the gun. This is found to be very nearly constant, even with wide variations in the charge of powder, and experiments with a 6-inch powder.

The Union Foundry and Machine Works, of Catasauqua, Pa, are rushed with an abundance of orders for the new plate mill, structural and general machine work. A large order for suburban stations on the New York Elevated Railway is being filled.

Kelly & Jones, of Pittsburgh, have been

The Mexican Iron Mountain Mfg. Com-pany, of Durango, Mexico, have ordered from the Lewis Foundry and Machine Company, Limited, of Pittsburgh, an outfit of rolling mill machinery, including a 460 horse-power Porter-Hamilton engine.

The New Castle Plow Works, at New Castle, Pa., were sold at receivers' sale on the 4th inst. The purchasers were Rev. J. C. Smith, of Rose Point, Edward McMillan, Wm. Agnew and Jos. Beecher. The price paid was \$5300. The works were built less than two years ago at a cost of \$20,000, and were running steadily until internal dissensions caused them to be thrown into the hands of a receiver. The new owners will start the works at once.

D. H. Fitzgerald, who was the president On the 3d inst., a number of men were injured at the South Chicago Works of the North Chicago Rolling Mill Company, by the explosion of an ingot mold. The mold, it

be repaired and new machinery put in for

The Perkins & Bradley Mfg. Company, New Haven, Conn., have recently moved their plant into much larger quarters, and have largely increased their facilities for manufacture. They expect in the near future to bring out a manufacture. uture to bring out a much increased line of hooks and wire specialties.

The Southern Wire Company, St. Louis. Mo., are at present running 50 machines, making everything in the wire nail line manufactured by an ordinary manufacturer. They are also making a line of twisted flat steel ribbon fencing, which is furnished both galvanized and painted.

#### Miscellaneous.

The Murray Iron Works Company, Bur-ington, Iowa, inform the trade that their oundry only was burned, and that they are rebuilding as rapidly as possible and expect to fill orders for castings in about a week. The other departments are running as usual, and the loss in the second control of the and the loss is fortunately not so great as was supposed.

Everson, Sherwood & Barker, Limited, proprietors of the New Brighton Pottery Works, at New Brighton, Pa., inform us that the report that they were about to remove to Steubenville, Ohio, is without foundation. The formation of a sewer-pipe works at the former place, in which the above firm are interested. above firm are interested, probably gave rise

The Industrial World, Chicago, says: " A company have been organized to operate nineral lands in Canada, with their head-quarters in this city. It is composed wholly of Chicago parties, and has taken the name of Troy Lake Mining Company, with an office at No. 175 LaSalle street. The com-pany's property is located about 30 miles above Kingston, Ontario, on the Rideaux Canal, and consists at present of 200 acres of land, with mining leases on about 8.0 more acres. The company have just commenced opening up the property, and expect by the 1st of July to enter the lists as shippers of ore. Their analyses, it is claimed, made by the Union Steel Company, of Chicago, show a larger per cent. of me-tallic iron than has heretotore been assayed in this country, so far as is known, assaying from 67.79 to 70.21 pure metallic iron."

The Pittsburgh pool on iron ore, including us two of their catalogues. They are fully illustrated, and describe in an interesting way some of their improved machines. roads, leaving each to secure its own busi-ness. There is no prospect of a war over the ore shipments, but, of course, every road will try to secure a good share of business.

It is reported that the largest gas well in the world has just been discovered at Fair mount, near Muncie, Ind. The test of Professor Orton, State Geologist of Ohio, shows that it is flowing nearly 12,000,000 feet per day.

The annual reunion of the Amalgamated Association will be held at Alliquippa, about 28 miles from Pittsburgh, on the 11th prox.

The stockholders of the Wheeling Natural Gas Company met at Wheeling last week, and elected the following board of directors: William Flinn, J. M. Guffey, John N. Neeb, C. L. Magee, C. B. McLean, John H. Hobbs, R. C. Elliott, C. W. Brockmeier, T. H. Given and W. T. Graham. The company have 99½ miles of pipe laid, and the monthly income is \$16.000. The debt of the company

#### Crusher Gauges for Hydraulic Gun Carriages.

From a recent issue of Industries, London, we reproduce the annexed engraving, illustrating a gauge which has been used for several years to measure the greatest inseveral years to measure the greatest in-tensity of pressure produced in the hydraulic cylinders of large gun carriages, by the recoil of the gun on being fired. These compressor cylinders, says our con-temporary, are fixed to and form part of the carriage, the rams are attached to the gun, and the object of the arrangement is to ab-

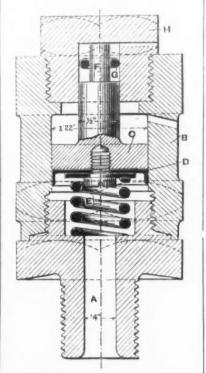
burgh, closed down the greater portion of their works last week for the purpose of making general repairs.

Furnace No. 1, of the Missouri Furnace Company, at St. Louis, has been blown out, after a continuous service of two years and six months. The furnace will be relined and put in first-class repair immediately.

The Cordon-Whitwell stoves, just put in desired; it is, therefore, necessary to know the exact hydraulic pressure in the cylinders when designing other recoil presses, and it is for this purpose that the crusher gauge was made. The water from the gauge was made. The water from the cylinders during recoil is discharged through a regulating valve into a long tank, or into a regulating valve into a long tank, or into a warded the contract for the steam heating for the Ohio Soldiers' Home, to be erected gauges, and spring-loaded piston gauges, near Sandusky, Ohio. The contract price were found incapable of measuring with accuracy pressures which increase rapidly, as in the present instance, owing to the momentum of the moving parts causing the gauge finger of the Bourdon gauge, or the piston of the direct acting spring gauge, to move beyond the position corresponding to the actual pressure in the cylinder, and thus the pressures observed are always too high. The Bourdon gauge is also very soon rendered unfit for use by sudden pressures, and it has the great defect that, in such a case as we are now considering, there is no way of seeing, after the gun has been fired, what was the highest pressure attained, unless a loose index finger is fitted, and this is thrown so far beyond its proper position by the sud-den rise of pressure that the readings are den rise of pressure that the readings are absolutely useless. A spring-loaded piston gauge is much better than the Bourdon gauge, but it has the same defect as regards momentum of the moving parts, though the liability to error may be greatly reduced by having shorter and stronger springs when ments of pressure; and even if the same to come. rapidly increasing pressures are to be measured. The truth of this will be readily per-

the manufacture of hardware of a special engines, where the oscillations in the steam character.—Reading, Pa, Times. and of less depth when stiffer springs are used. In fact, whenever a high-speed en gine has to be indicated, the shorter and stronger the spring of the indicator the more regular is the steam line of the diagram, and possible with spring-loaded piston gauges, they have proved to be greatly inferior to the crusher gauge we now illustrate.

The following description will make the illustration clear: A is the steel base, screwed into the recoil press. B is the cylinder of the gauge, screwed to the base A, and containing the steel piston C, which is fitted with a bronze check ring, D. E is a hard breas wire spring, to keen the piston. fitted with a bronze check ring, D. E is a hard brass wire spring, to keep the piston close up to the soft copper gauge F, which is held in place by a soft india-rubber ring, G. H is the cap of hard brass containing the copper gauge and the end of the piston C. It will be observed that the piston of this gauge is much lighter, and moves through a much smaller distance than any other form of gauge can be made to do, and other form of gauge can be made to do, and sequently the momentum is so small that it may safely be neglected. The greatest



Crusher Gauge for Hydraulic Gun

movement of the piston is never more than about % inch, and the highest pressure in the cylinder is shown by the amount by which the copper cylinder has been shortened. It is also very convenient to have an actual measure of the pressure, which can be kept for futur reference. The copper cylinders are made of two sizes, equal received is looked for in one of the accom-panying tables, and opposite to it will be found the pressure per square inch required to produce it. The pressures in the table have been calculated from actual experiments, with copper of the same purity and hardness. The area of the piston is 1.168 square inches, experience having shown that this size just gives an effective area of I square inch, the difference, 0.168, being equal to the friction, which is practically onstant within wide limits of pressure. modification of this gauge is used for determining the pressure in the powder chambers of guns at the time of firing; but the principle involved is the same.

C.	P.	C.	P.	C.	P.	C.	b"
.000	000	.058	1527	.124	2412	,191	3354
,005	505	.060	1553	.125	2433	.196	3375
.006	559	,062	1579	.128	2468	.198	3105
007	608	.064	1609	.180	2494	,200	3431
800.	655	.065	1683	.132	2519	508.	3457
.009	695	.066	1686	.134	2546	.204	8487
.010	785	830,	1661	. 136	2572	.206	3513
.012	808	.070	1687	.188	5005	308	3539
.014	860	.072	1714	.140	2638	.210	3565
.015	889	.071	1743	.142	2654	.212	4591
.016	915	,075	1755	.144	6892	.214	3621
.018	963	.076	1767	.146	2707	.216	3547
0:30	1008	.678	1796	.148	8783	.218	3674
092	1045	.000	1822	.150	2763	085.	3700
024	1071	.082	1848	.152	2789	.222	3726
025	1064	.084	1878	. 154	2815	.224	3756
.026	1098	.096	1904	. 156	2841	. 226	3783
.028	1124	,088	1930	.158	2871	.228	3306
030	1150	.090	1956	.160	2897	.230	3834
.032	1180	.093	1982	.16%	2923	.233	3960
084	1206	.094	2008	.164	2949	.234	3886
035	1220	.096	2098	.166	2975	.236	3916
.036	1292	.098	2065	.168	3005	.238	3942
038	1258	.100	2091	.170	3081	.240	3968
040	1284	.102	2117	.172	3058	.242	3998
042	1314	.104	2143	.174	3064	.244	4031
044	1340	.106	2178	.176	3110	.246	4047
045	1855	.108	2199	.178	3136	.218	4077
046	1366	.140	2:225	.180	8162	.250	4103
045	1332	.112	2351	.182	3192		
050	1419	.114	2277	.184	8318		
052	1448	.116	2293	.186	3244		
054	1475	.118	2880	.188	3270		
055	1487	.1:30	2359	. 190	3296		
056	1501	.122	2386	.192	3326		

It will be readily seen that the copper its crushing strength with the values given | Pennsylvania.

to the use of indicators on quick-running in the tables, and thus obtain a constant, by which all future results are to be multiplied before being referred to the tables. The tables are very instructive as regards the behavior of cylinders of soft metal, when compressed beyond their elastic limit, and as very little information is published on this regular is the steam line of the diagram, and the same is true of pressure gauges; but few words upon it. Each of the tables was even after everything has been done that is made from actual experiments on cylinders of copper, one of which was ½ and the other ¼ square inch area, and the pressures required to produce the compressions accurately measured by a specially constructed gauge. On comparing the loads required to shorten the two cylinders, we find that they do not follow the same law after, as before the limit of elasticity is reached, in which case the loads to produce the same compression in each are proportional to the area of the test piece; but after the permanent de-formation has begun, the loads for the same compression in the large and small test pieces are continually varying.

#### TABLE 2.

howing the lengths (L.) of soft copper cylinders 1-12th square inch area, and initially  $\frac{1}{2}$  inch long, and the hydraulic pressures (P.) in pounds per square inch necessary to compress them.

L.	P.	L.	P.	L.	P.	$\mathbb{L}_{\epsilon}$ .	P.	£	$P_{i}$
,5(x)	()	400	3266	363	5333	304	72(8)	245	9166
	1500		3.3(k)		5266	3013	7233	214	19201
	1525		333.1		5300		7266	.203	19-5583
	1550		3366	360			7300	212	9296
. 177			3400		5306		7333	211	93 10
476	1600		3433		5400		73/16	240	0333
	1633		3466		5433		7400	239	103161
	1666		350k)		5 100		7433	238	D \$183
473	1700		3533		5500		7401	257	9433
	1783		3566		5533	1207	7500	23 7	9.806
	1766		3600		5566	.294		1213	9500
	IN.H.		3633		5600		7566	.334	9533
.469	1833		3666		56333		Title	233	9566
	1866	.409	3700		5666		7/033	42000	586(3)
467	1900	.408	3733		5700	.200	7666	.331	9633
.466	1933	.407	3766	.31%	5733	. 289	Tribl	. 33 :	9666
.465	1966	.406	3500	.847	5766	1965	7733	2.0	9700
464	2000	.405	3533	316	5800	207	7766	13.0%	9733
	20:25	.401	3866	.345	533	. 2565	<b>7800</b>	207	9766
.462	2050	-403	3900	.344	5866	250	7833	. 226	9500
	2075		3933	.343	5900	. 1294.6		245	98033
.460			396%	.342	5933	. 233	7900	1201	9866
	2133	~ 400	4000	.341	5966	3R2	7933	203	9900
.458			4033	.340	tiu(n)	185.		12-2-2	9933
	2200		4096	.339		:2501		201	9966
. 456		-397	4100		0.000	.279			100:0
.455			4133	.337		.278			10033
.454			4166		6133	.267			LUGG
.458			4200	.335		.276		.917	10100
.452			1533		6500		8166		10133
. 451			4:266		6283		83/ki		10166
.449	2400		4300		6266		8233		10200
448			4333	.330	6300	.272	8300		10266
	25-10		4400		6366	270		911	16300
	2533		4433		6400		8365		10333
.445			4456		6433		8400		10366
	2600		4500		6466		8433		10400
	2633		4533		6500		8466	,207	10,33
	2666		4566		6583		8500		10456
	2700		4600		6166		8533	205	10500
	2725		4633	324	6600	.263	8566	201	10533
	2750		4666		6633	2652	8(910)	203	10596
.438	2775	-379	4700		6665		NG 33		10000
.43.	2800	-378	4733	.319	6700	.250	MIGG.	.201	10633
.436	2833	.877	4766		6783	13511	8700	(20)	10665
	2866	-376	\$14()(1)		6765	25.34	8733		10700
	2900	-875	4833	.316	6800		8766		10733
	2933		4866		6893		505(JE)		10766
	2966		4900	.814	6966	255			LONGO
	3000		4933	.313	6900	.254			10533
.480			4966		6933	, 258			106.00
.429			5000	.311		. 252			10900
, 4:3%	3100		5033	.810		.251			10533
.427			5066	.809		.250			10000
.426			5100		7066				11(00)
.425			5133		7100		9066		11033
.421			5166	.3.05		.247			11066
.428	0.600	-303	5200	(300)	7166	,246	181 (3-3	. 170	11100

To shorten each of the cylinders 310 inch, loads of 1500 pounds and 1008 pounds are respectively required—that for the large one being only 11/2 times as great as for the small one, instead of double the load, as uon, and the length is in every case exactly ½ inch. Before fixing them in place, the diameter and length are carefully measured in a Whitworth measuring machine, and after the gun has been fired the length is exactly twice as much for the force required is exactly twice as much for the large as for the amount of compression it has received is leader to the same way; pression, 2.19 These differences appear to be due simply to the "barrel" form assumed by the cylinder during compression not being the same for large and small cylinders, fact which was only ascertained by repeated experiments. Further, the ratio of pressures required for different compressions is not the same in the two cases: thus, with the large cylinder, the load equivalent to a compres sion of 10 inch is 1 666 times that for 10 inch compression, while with the small the proportion is only 1.473. And for 14 inch compression of the large cylinder the load is 2.250 times that for 10 inch, but only 1.062 for the small cylinder

A statement has been published in some of howing amount of compression (C.) of soft copper cylinders, 1-24 square inch area, and initially a inch long, with the hydraulic pressure (P.) in pounds per square inch required to effect that compression.

The daily newspapers of this city, and has been widely circulated throughout the country, that Messers. Cooper, Hawitt & C., have made a proposal to their men to take hold of the Trenton Iron Works on a cooperative plan, allowing the firm 6 cent on the capital invested. We are pared to state that there must have been some misunderstanding, since no direct offer was made to the men. Mr. Hewitt, in the course of an interview with a committee representing themselves as Knights of Libor, informed them that the works had not paid a fair return on the investment of capital made for a number of years past, and last year had run considerably behind. He stated in the nature of a general proposition, that he would be glad to have any one take the works off their hands, and pay them 6 per cent. on the capital invested. If the men believed that the business paid, they might try the experiment; but, as a pro-liminary thereto, they would find it neves the absence of any guarantee of interest on capital invested, or working capital, it is not likely that Copper, Hewitt & Co. would enter into any such arrangement

> Although the principle of the centrifugal pump was known more than 100 years ago, and pumps of this description were made and used experimentally 50 years since, it was not until 1851 that they were brought

The Main Belting Company, Philadelphia, inform us that since the first of the year they have been unusually busy, more so than for several years past, and indications point of it will be sufficient for many measurements of pressure; and even if the same kind of copper is not obtained in future experiments, it is merely necessary to compare alluded to as having proved a great success, and is used in many large iron works in

May 1

#### Proportions of Locomotive Cylinders.

Mr. R. Atkinson, head mechanical drafts-Mr. K. Atkinson, nead mechanical drafts-man of the Canadian Pacific Railway, writ-ing on the subject of "Proportions of Loco-motive Cylinders," in the last issue of The National Car and Locomotive Builder, says;

In forming a basis for a discussion of this subject, the first considerations are, (1) the amount of work to be done, (2) the kind of service to be performed, and (3) the conditions of the weather, &c., in which the engine is to perform the given service. The latter of these being the most variable and uncertain in its variations, and the power of haulage of the engine varying in a direct ratio with it, renders it nece-sary to enter into a full u derstanding of how much the power is affected. Since (by Molesworth) the adhesion per ton (2240 pounds) amounts, in good weather and with dry, clean rails, to 600 pounds, while on frosty rails it falls to 200 pounds per ton, it follows that the gross weight of train which it is possible to haul in the latter case is only one third that in the former—in other words, the haulage in winter is, or may be, only one third, or 33 per cent., of that possible in summer, a decrease of 67 per cent. This is also variable to some extent, being greatly decreased by hard ice on rails and in flanges, and increased by frequent passing of trains over the road, thus cleaning the rails to some extent ; still, even this improvement is lost where snow is drifted rapidly across the track; however, as the whole road is, probably, never equally bad, an average loss of 50 per cent. of haulage power may be assigned for hard winter service. Of course, there are some short periods of a few days in each winter when these circumstances do not exactly hold

weather, which factor becomes rapidly less inder. in the particular kind of weather in which it is most required. The service required is, without doubt, at its maximum in the summer for most railways, but probably the decrease in general winters does not amount to more than 25 per cent. (and is amount to more than 25 per cent. (and is partially due to delays causing loss of traffic), and the service has to be performed with a decrease in haulage power of 50 per cent. Relatively, then, the total power being equal how captains could be assisted in the safe and the service has to be performed with a decrease in haulage power of 50 per cent. Relatively, then, the total power being equal to the service in summer, it follows that the power would be only 67 per cent. of the service required in winter. To state the problem generally, it is found in the service of all railways more difficult to provide sufficient haulage power in winter than in summer, and this in no slight degree, though varying on different roads. The direct cause of this difficulty is that the engines "slip" to such an extent that the loads have to be diminished to suit the powerie, to suit the adhesion, or the adhesion have to be diminished to suit the poweri e., to suit the adhesion, or the adhesion reclassified under the following headings:
increased by defective means such as
'double heading," which is most objectionable, and the result is the same—viz, loss
of power at command by this double heading. It is thus self-evident that the means
are at hand to overcome the greater part of
the trouble by increasing the adheaion to are at hand to overcome the greater part of the trouble by increasing the adhesion to suit the requirements of winter service—i. e., the engines should be designed so that the adhesion shall be more in proportion to the winter service than to that of the summer. The next section of the subject is the

principal one—that of proportions—when the adhesion (or weight on driving wheels), the boiler pressure, size of driving wheels, and the class of service are given. The boiler pressure most appropriate to conditions of service is a very open question, and is gradually undergoing considerable change. The size of driving wheels depends directly upon the service required. The class of service comprises freight or passenger, either local or express, and switching, and the general conditions of track on which the service has to be perfectly to the maximum grade and its.

Book "has been supplied up to the present time with 17 steamers. Lately Mr. Denny has devised a means by which the captain is enabled to determine the stability of his ship at any moment during the progress of taking his cargo on board. The instrument consists of a pendulum hung on knife edges, which are fixed at the lower empty of the progression of track of which the service has to be performed—i. e., the maximum grade and its incline, also length, the longest grade and its incline, also the sharpest curve and percentage of curves to tangents, and of grades to level track. to tangents, and of grades to level track. In the case of fast passenger service (which usually makes the heaviest demands upon the designer) a full description of the section

Given the speed of the train at its maximum and the size of the driving wheel, the revolutions of the wheel should not exceed 300 per minute, and the stroke should be on board should take place. The vessel is at the piston speed should not then exceed 1000 to 1050 feet per minute, under conditions similar to those of a passenger fill one or more of the ship's boats resting in train at 60 miles per hour—probably 700 feet piston speed per minute would be high steamer of about 5000 tons gross, it is suffi piston speed per minute would be nign cleant to use two 3) feet lifeboats on each side enough at average speeds—even the length of the stroke as above deduced may require to be decreased if extra long side rods are to be decreased if extra long side rods are cleant of the stroke as above deduced may require which would give an inclining movement to either side of about 224 foot tons. These boats are alternately filled and emptied, and have a considered desirable for other sides of the index to the right and safe to run side rods of flat section 9 feet to the left of the center line on the board of the long at 24 inch stroke, and at a speed of 60 miles per hour for general service, as the miles per hour for general service, as the proportion of failures would be unwarranted.

which is a mere matter of calculation, it then only remains to find such a diameter of amount of cargo, ballast and coal which cylinder as will develop the required energy haul the train at the maximum speed when cut off occurs at a p int sufficiently short to prevent any loss of speed from back pressure. As this depends greatly upon passages, &c , it may be taken for granted that if the motion is a well designed one of the American type, the full gear cut off being at ab ut 21 inches—the stroke being 24 inches—that at high speeds, with full train, the cut-off will be at about 8 inches from commencement of stroke. Then the average cylinder pressure in full gear should not be more than 15 pounds below the boiler pressure, and the diameter of the cylinder should be such that this pressure will give out about 500 to 550 pounds tractive force on tread of wheel per ton (2240 pounds) of weight on drivers, taking tires as being new.

A passenger engine with cylinders of the dismeter and stroke thus found, and which fiameter and stroke thus
can just haul a given train on a grade of 1/2
per cent. with the motion in full gear, will
haul the same train at 45 miles per hour,
haul the same train at 45 miles per hour,
W.C. De Pauw.
Tracklaying in the First Four Months of 1887...
Washington News. excluding stops or for long runs, on a fair main line track having a few grades of 1 per

cent, and scattered curves up to 4° or 5°. This has been verified in actual practice. For freight service the cylinder power should be rather less, and the tractive force at tread-wheels is sufficient at 500 pounds per ton of weight on drivers. For switching engines, 450 pounds tractive force is suffi-cient, as the tracks are nearly always more or less greasy, and the same holds good for regions subject to fog and mist. Heavy sections of line, such as long grades and a frequent succession of curves require

and a frequent succession of curves, require more engine power—i.e., more adhesion, but the ratio of cylinder power to adhesion should be proportionately less, dependent upon the duration of bad weather, and the cylinder power can then be higher per ton f train. There can be no doubt that if the ylinder powers are above these allowances that considerable loss is sustained by wear of tires and machinery and in consumption of fuel, also great dissatisfaction is caused by the diminution of service to be obtained in winter, with its attendant evils of delays, loss of traffic, abuse of power, and friction among officials. Instances can be easily selected where engines designed so as to fulfill the above conditions have given re sults quite equal to those expected. One point which is most frequently neglected in designing engines is to ascertain from re-liable data the actual heat value of the coal which is to be supplied; an engine cannot be designed to burn coal of fair quality, and probably fresh mined, with economy, and still in such a manner as to give satisfactory results from the scrapings of the coal heap. It should be carefully borne in mind that though a more brilliant superficial perform ance can be got in fine summer weather b having rather more cylinder power than the above, still it is not so satisfactory all the year round, and is more than paid for in extra cost of repairs and in the excess of good.

The power of an engine, other things extra cost of repairs and in the cause of being neglected, thus depends directly on the being neglected, thus depends directly on the cause of which may be looked for in the in condensation due to the larger cyl-

#### Practical Application of Stability Calculations for Ships.

In an interesting paper entitled "The are classified under the following headings ing, ballasting and trim of a steamer. A longitudinal section of the steamer is also added, giving cubical contents of the holds, the position of their centers of gravity, contents in tons of the bunkers and water bal-The next section of the subject is the principal one—that of cylinder power or proportions—when the adhesion (or weight on driving wheels), the boiler pressure, size of driving wheels, and the class of section initial list, the board is provided with seg-mental slots, allowing a certain adjustment of road should be given.

In designing the cylinder proportions, the form an experiment care should be taken first point to consider is the piston speed. that there is no free water in the bottom or to one side, the most practical way being to Considering such a stroke to have been board, and the point of intersection of the selected as will fulfill the above conditions. might safely be shipped at the then mean draft of the vessel. The curves are so constructed that the captain need not have any scientific acquaintance with the various elements on which the safety of the ship de pends, but they enable him to read off the required information at a glance. Two steamers have been supplied with this pen-dulum and sets of curves up to the present.

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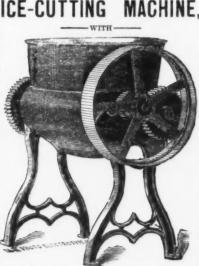
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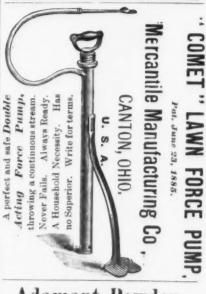
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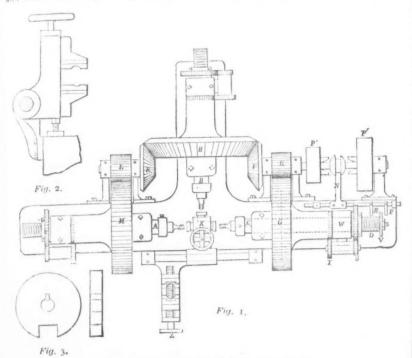
#### MECHANICAL.

#### Three-Way Tapping Machines.

Just who designed the first of the now ed "three-way tappers" is difficult to In an interesting article entitled:
infacture of Pipe Fittings in the
States," written for Engineering, by D. Forbes, of the well-known firm

shown in Fig. 1 at Z, moved into place, and the machine started, so little time is lost while taking out and replacing a fitting.

As this change did not prevent at all times the stripping of threads, lead screws were substituted for the levers, which helped to overcome the difficulty, but did not do so entirely, and the question of commercial on the left. In dotted lines through the advantage was not absolutely admitted. The third change has, however, put the question Forbes, of the well-known firm beyond all dispute, and it was this: As the & Curtis, of Bridgeport, Conn., find the engravings which we annex, which show the general plan of some of



THREE-WAY PIPE TAPPING MACHINES.

reduced to a minimum a stop motion was, dium machines and are always found even in the earlier days, placed on the mathe original machines being made with one vertical and two horizontal spindles.
The first idea as to holding the fitting was The first fides as to holding the fitting was simply a stout, rigid wire in proper position, fitted with cast-iron jaws, so made that the fitting was imbedded, so to speak, in them. The operator sets the machine, puts the fitting in place, starts it, and by placing his three-way tapping machine are as follows:
foot on a treadle, which, through a system of

I. Ample power to drive it. 2. Unusual rally screw themselves out—that is, if it so happened that a thread had been made by was discovered. First it was found that the was discovered. First it was found that the vise, instead of being a rigid affair, must work on the in feed; a tee is in the jaws of

these machines. The proportions are not exact, but are simply drawn to make the explanation clear.

The idea is to arrange three spindles carrying taps, so that they work together. In the fittings used in the United States a desire to economize in material has caused the bends to be made very short, thus bringing the thread-ways very close together, which is an element of danger in attempting to run several taps into a fitting at the same time, as, if they were made to enter but a make a part of a turn before the second started, and then the third spindle to reverse. This was tried, and solved the trouble of stripping, besides lessening the strain on the entire machine. Like the majority of tools, the power required to run a three-way tapper has never been well tested, and all the information that can be given is the belt velocity, width and size of pulleys. The distance between the pulleys is in all cases good—not less than 8 feet. time. as, if they were made to enter but a thread too far, they wou'd interfere and cause trouble. In order to have this danger

Mach			Feet per minute.	Pulleys inches.	
34 to	3	14 B	650	8	2 belts
I to	2	4	650	10	2 belts
216 to	4	5	750	12	2 helts
4 to	18	6	800	1.4	2 belts
8 to	18	8	800	18	2 belts
Tr.	-		43	0	1

t. Ample power to drive it. 2. Unusual ers, brings the taps up to their work and strength to meet possible strains for hard eds them in, the stop shuts the machine castings, &c. 3. Ease of access to all parts, and, on being reversed, the taps natuand, on being reversed, the saps hat ally screw themselves out—that is, if it so tappened that a thread had been made by heir entering, or that, if made, they were notion was hrown on. In short, the first attempt at y tapping was not a commercial drawings, Fig. 1, which supposes the ob-Little by little the cause of failures server to be looking down on the tool. The

has mounted upon it spur and bevel pinions E and F, E transmitting power to the spur gear G, and F to the bevel gear H, which in spur gear G is shown a steel spindle C which carries a tap. A spline or keyway is made in it for about one-third its entire length. On this spindle is fitted a cast iron Machines wor reversing, it was proposed to start the taps disk as shown by dotted lines at G; a key ir this disk fits into the spline of the spindle. preventing it from turning, but yet permit ting a sliding movement of the spindle

Fig. 3 gives a detail view of the disk, which, it will be noticed, has a segment cut from it. In the other two disks fitted to the gears M and H this segment is of different widths, none of the three being the same. Into these spaces project from the gears M, H and G lugs, which it is evident, when the machine is started, must come in contact with one side of the segmental spaces, and they being of different widths start the smallest, the reason for this being that all sizes of pipe above 2 inches, as we have said before, have eight threads to the inch. versed act in the same way against the opposite sides. The spindle C carries the spur gear G, which has a cylindrical extension or sleeve, on the end of which is cut gear eeth for a purpose which is to be explained

The outboard end of the spindle C is shown threaded, as are the others, A and B, but on the extreme end of C is a disk, which of course, travels forward and back as the machine feeds in and out, the use of which

It is evident, then, that if properly proportioned gears are put in place of T and S

Machines worked The 12-inch machines and longer have not

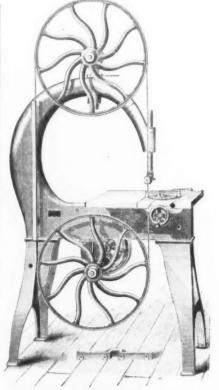
as yet always been used in pairs, and if used singly the man who tends it has ample time

Mr. T. W. Gentry, master mechanic, and Mr. Geo. W. O'Brien, general foreman, shops of the Richmond and Danville Railroad Company, have recently been granted a patent on an apparatus for heating, setting and removing tires, and arrangements have been made with Messrs. Pedrick & Ayer, proprietors of the L. B. Flanders Machine Works, Philadelphia, Pa., for its manufacture and sale. It can be arranged either as will soon be apparent. The gear teeth cut ure and sale. It can be arranged either as on the sleeve of the spur gear G work into a stationary or portable plant. The cut the gear T, which is mounted on a shaft, on shows the general arrangement of the latter, the other end of which is the gear S. The The old process requires the wheels to be bracket which carries this shaft is adjust-able, so as to permit change gears to be sub-out to some safe place, where fires are built stituted for T and S. The gear S runs into the gear W, which is threaded to meet the screw on the spindle, thereby forming a nut, and it is prevented from any lateral movement by the bearings on each side of it. this is possible it is very slow, costly and unreliable; and in order to get sufficient portioned gears are put in place of T and S any desired feed for the spindles can be obtained, but as the number of threads to the inch is eight on all sizes above 2-inch on large machines, this pitch could be cut on the spindle; but it is preferable, for the spindle; but it is preferable, for the sake of wear, to make it coarser and give the proper advance by means of gear. On a rod held by two bearings bolted to the main frame are two fingers or triggers, R and P. and the clutch shifter N: to this rod main frame are two fingers or triggers, R and P, and the clutch shifter N; to this rod is attached a weight so as to have a tendency to draw it toward the center of the machine, or from right to left. The trigger down the connections. In taking off or

found that good oil is by far the most too thin to stand; the irrection and of their omical, as it allows a greater speed and thus generated have loosened up all of their tires. We find ourselves compelled to give effects saving in power and wear on taps. tires. We find ourselves compelled to give The output on first-class tapping machines all of these engines new tires, while is on the average about as follows, calling the running gear and machinery is in nine hours of actual running a day's work first-rate order, and does not need com Ten hours is a day's work, but time must be ing down or being worked upon. It allowed to grind taps, try gauges and adjust occurred to us that it would be an excellent opportunity to give our gas tire heater a good trial, so the new tires were ordered and specified to be of uniform outside diam eters and free of flats, &c., with a view of being run without turning off on outsides. They came to hand, and we found them very nearly perfect, and as soon as the first engine arrived for her new tires we chucked two tires on each of our double driving-wheel lathes, and while tires were being bored out to fit wheel-centers we slipped off connecting rods, wheel covers and driver brake clogs or heads (nothing else was re-moved), jacked up engine until wheels swung over rails just enough to allow flange smallest, the reason for this being that all sizes of pipe above 2 inches, as we have said before, have eight threads to the inch.

Apparatus for Heating, Setting and Removing Tires.

Mr. T. W. Gentry mestar mechanic and from 10 to 15 minutes each we dropped off the old tires, and by time the wheel-centers were cooled off the new tires were nearly ready to be applied. We had a suitable



Method of Tempering.

IAVAVO Fig. 1.—General View

FLEXIBLE BACK BAND SAW, MADE BY HENRY G. THOMPSON & SONS, NEW HAVEN, CONN.

sired point by a set screw. The finger R is simply a piece of steel which can be slid along the bar and made fast where desired. To start the machine the rod is drawn back by means of a proper lever until the thimble between the pulleys P<sup>1</sup> P<sup>11</sup> is made to lock

APPARATUS FOR HEATING, SETTING AND REMOVING TIRES.

Made by Pedrick & Ayer, Philadelphia, Pa.

the chuck X folded into position, while a second chuck Z is slid to the left and thrown the second chuck Z is slid to the left and thrown the second chuck X folded into position, while a second chuck Z is slid to the left and thrown the second chuck Z is slid to the left and thrown the second chuck Z is slid to the left and thrown the second chuck Z is slid to the left and thrown the second chuck Z is slid to the left and thrown the second chuck Z is slid to the left and thrown the second chuck Z is slid to the left and thrown the second chuck Z is slid to the left and thrown and order that the fitting in trigger R prevents the weight from a overhead countershaft which are allowed, which also the fitting in the chuck X folded into position, while a second chuck Z is slid to the left and thrown in the weight, and the engagement of the toe prehended than from an ordinary stove. The old tank, manipulating valves, gauges, &c., are inside close by the track that the engine is run in on.

From a private letter from Mr. Gentry to the machine of the tweight, which immediately throws the rod to the left, unlocking the pulley P<sup>n</sup> and allowed the spindles back until the finger P is and the smaller for greater reversing that out of the way, and the second chuck, so that it is in a confided back, so that it is in a confided back, so that it is in a confided back, so that it is in a confided back is may be slid to one side on the larger one driving in the chuck X folded into position, while a second the back, it is if a confider the the same time raises the weight from the weight, and the engagement of the toe that the eliging one, it is gradually moved toward the trigger R, and the same time raises.

The old tank, manipulating valves, gauges, &c., are inside close by the track that the engine is run in e play, to a certain extent, as did the the chuck X folded into position, while a the larger one, and at the same time raises

hoop to be placed around the the hoop is not a continuous ring of pipe; the ends are plugged up and are left a little six new tires put on, and the engine that came in in the morning to get an entire set of new tires was ready for service that same them. One of the main features is the generator, in which are four retorts, heated by coke, coal or wood. Into one of these retorts oil is fed through a very small opening and needle-point valve. This generates gas,

In close proximity is a tank, containing about 10 gallons of common kerosene oil, and at any desired place is an air compressor that supplies air to the device. A very convenient arrangement is an air-brake so that an equal air pressure is on the oil that is operating on any part of the plant. This is controlled by a valve at the will of with the two air retorts in the generator, so that the air and gas are at about the same temperature, and are propelled by the same force through the generator. From the generator to the burning hoop is made a connection through the pipes of which the gas flows, and in a fitting with an injector nozzle the air mingles with the gas and is forced through the burning hoop that has been placed around the wheel. On the inner side of this hoop small holes are made about 1½ inches apart. The hoop is held off from the tire about 1 inch by small studs. After the furnace has been fired up and the retorts are hot, air is admitted to them; also When the tire is hot enough the valve is shut off, the flame stops, and the generator also. The gas is made only as fast as used, and is under absolute control. There is no The points of presswaste and no danger. ure all have gauges, and can be seen by the operator. The flame that strikes the tire is a blue one and intensely hot, penetrating the tire very quickly. By placing the generator out of doors, along a wall or any convenient place, no more danger need be apprehended than from an ordinary stove.

R has a slight tipping movement enough to allow a steel toe on its short end to engage with a piece, which is movable in a slot in the main frame, being made fast at any desired point by a set-screw. The finger R is evening. We consumed in all about nine hours' time, and employed one machinist and six laborers in the gang. I wish to add, however, that the tires had only one light and needle-point valve. This generates gas, which passes into another retort. The two other retorts are for heating the air that is no matter how tires were applied. This matter how tires were applied. This first attempt at removing and recut taken through them, and that I did not take into consideration the men who bored placing whole sets of tires without removing wheels from the engine, and we desired to show that it could be done successfully and with great economy. We measured the oil consumed during the whole operation, and pump, used for testing brakes, &c. At achments are made to this oil tank on top, or 3 gallons for the six old tires, and a little or 3 gallons for the six old tires, and a little more than 3 quarts for each new tire, or, say, about 5 gallons for the six new tires, making in all 8 gallons, at 8 cents per gallon,

#### Flexible Back Band Saw.

Messrs. Henry G. Thompson & Sons, New Haven, Conn., are putting on the market a flexible back band saw for cutting metals. Of the engravings which we present on this page, Fig. 1 illustrates a saw frame specially constructed for this tool. The machine can cut at any angle, has an iron table 24 inches square, in which a slide is made level with the top surface, and oper-ated by a screw and hand wheel; it carries the fence for gauging the angle of the cut. The fence is graduated in degrees, and can be quickly clamped at any angle or as quickthe oil through the needle point valve, and in a few seconds gas can be admitted into level and clear. The screw and hand wheel the burning hoop and fired. The amount of flame is regulated by the needle-point valve, and the slide moved by hand. The saw wheels have adjusting tension and are made adjustable to line up the saw with the table The upper and lower saw guides have hardened steel rolls. The weight of the machine with countershaft is 925 pounds; the countershaft has a four grade cone. A brazing fixture goes with each machine, the saws being brazed together in the usual manner. The band saw being specially designed for metal cutting is tempered as shown in Fig. 2, the teeth being so hard that a file will not touch them, while the back is soft. These flexible back band saws, it is

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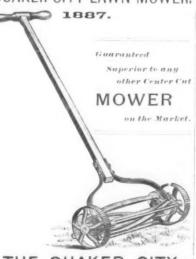
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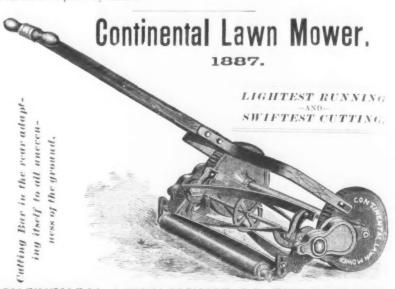
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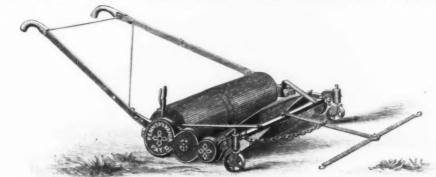
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Horse Mower, Closed Cylinder, 30 inch Cut, with Handles and Draft Irons. Extra for Seat, Spring and Foot Board, -

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E. C. Atkins & Co., Indianapolis, Indiana, SILVER STEEL DIAMOND CROSS-CUT.

We are the sole manufacturers of Silver Steel Saws, and enjoy the distinction of not only having first introduced the best Saws, among which are the Champion, Diamond and Dexter, but of improving and maintaining the quality of Saws to a degree which challenges comparison.



Ground substantially uniform gauge on the toothed edge, and any gauge required on the back

ATKINS'

Cross-Cut, Circular, Band and Gang

\$100.0

Are Everywhere Reccs nized as the

Standard of Excellence. WESTERN AGENCY FO TANITE EMERY WHEE S

# Gray Iron and Brass Castings.

To those who are in the market for Castings:

We should be pleased to have you send us drawings, cuts or sketches, or preferably es of the castings you are using and allow us to quote you our prices. It would be still better to forward patterns with a small trial order on which we will agree to make a still better to forward patterns with a small trial order on which we will agree to make a satisfactory price. We are confident of our ability to produce castings of the finest quality known to the trade at reasonable prices. We use only the best obtainable materials and approved modern appliances. We employ only steady and intelligent skilled workmen, paying them good wages. While this may make our castings cost more per pound than those of cheap material and poor workmanship, we will guarantee ours to be much less expensive to the user in the end, because of their proper weight and the time and labor saved in the drilling, planing, turning, filing or other finishing. We prefer the reputation of being a high-priced house which does only the very best work to the name of a cheap producer of rough, hard and low-priced castings, out of work to the name of a cheap producer of rough, hard and low-priced castings, out of



shape or of heavier weight than the patterns call for. It is astonishing to notice how much extra weight can be (and often is) added to a casting by a careless, incompetent molder, rushing out piece work at starvation wages! This is generally overlooked by buyers of cheap (!) castings.

We have lately had the unsolicited testimony from a customer in Loadon, to whom we had shipped some light iron castings, that his workmen were able to finish our castings in one-third the time they required to do the same work on castings from similar patterns made in England! made in England

We have facilities for wood and metal pattern making, drilling, polishing, plating, japanning and the manufacture f hardware and light machines by contract.

Machinery Castings, Light or Heavy. Low Prices on Large Contracts. Freight paid to principal points in New England and New York. Correspondence Solicited.

SPRINGFIELD FOUNDRY CO., 93 Liberty St., Springfield, Mass.

TUCKER & DORSEY MFG. CO., INDIANAPOLIS, U.S.A.



Write for Special Dis counts to Jobbers and notice next issue.





THE

ILLINOIS WIRE NAIL CO., CHICAGO,

MANUFACTURERS, 224 and 226 No. Union St. 12, 1897

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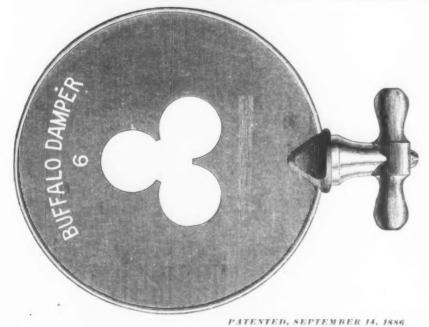
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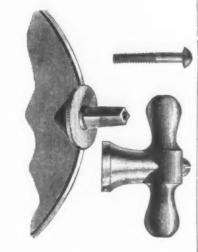
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### BUFFALO DAMPER.

With Black Enameled Wood Handle.





Separate Parts.

Single Bearing. Four Pieces. No Springs.

SIX SIZES, 4, 41, 5, 51, 6 and 7 inches.

### SIMPLEST, BEST AND MOST POPULAR DAMPER MADE.

PRICES QUOTED ON APPLICATION. BUFFALO HOT-AIR DAMPER CLIPS.

SOLE MANUFACTURERS,

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## SAFETY DOG MUZZLES



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PATENT IRON FILLING



The Strongest and Best Wheelbarrow is DREYFUS

Corrugated Steel Wheelbarrows.

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CLARK'S DRYING EXHAUST



GEO. P. CLARK, Windsor Locks, Ct.

### SOLID SPOUT MINERS LAMP.



JUNT&CONNELL LIMITED SCRANTON.PA

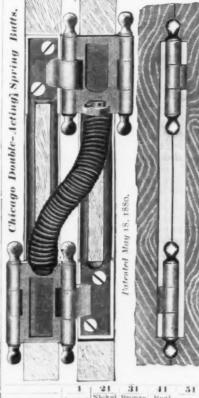


CHAMPION IRON FENCE CO., KENTON, OHIO.

Largest Iron Fence and Railing Works in U. S.



SPECIALTIES—Iron Stairs and Jail Work, Builders' and Ornamental Iron Work, and the only manufacturers of Malleable Iron Cresting, guaranteed against breakage; also manufacturers of the Celebrated Ohio Champion Iron Force and Lift Pumps, Send for 150-page Catalogue.



Manufactured by CHI AGO SPRING BUTT CO.,

ESTABLISHED 1853

HOWSON & SONS ATTORNEYS AT LAW SOLICITORS OF PATENTS

119 South Fourth Street PHILADELPHIA, PA. Branch: 915 F Street, WASHINGTON, D. C.

197 Kighth Avenue, New York.

The Strike of the Coke Workers.

Last week witnessed the inauguration of another large strike in the Connellsville coke region. It will be remembered that immediately following the advance made by the syndicate in the price of coke from \$1.50 to \$2 per ton, the workers demanded an advance of 20 per cent. in wages. This demand was refused by the operators, who agreed to advance wages 5 per cent. This, in turn, was refused by the workmen, and after considerable trouble, it was finally agreed to decide the controversy by arbitra-tion, and John B. Jackson, of Pittsburgh, tion, and John B. Jackson, of Pittsburgh, was appointed umpire. Several weeks were spent in hearing the testimony of both operators and workmen, when the umpire finally gave his award, the substance of which is as follows: "After a thorough and careful consideration of the evidence brought before me on the question concerning the article in your agreement of December 24, 1886, reading to take under 'advisement a just advance in wayes when the selling 24, 1886, reading to take under 'advisement a just advance in wages when the selling price of coke is advanced,' and after having seen the contracts for the delivery of coke and verified the statements made by Secretary Atcheson and submitted by him to the arbitrators, I find that there should not be any advance in wages until there is further advance in price of coke." From the fact that the workmen had been offered an advance of five per cent. and refused it, the effect of this decision upon them can be imagined. A call for a meeting to be held at Everson, Pa., on the 30th ult., was at once issued. At this meeting the following resolution was unanimously passed:

\*Resolved\*, That we demand an advance of

Resolved, That we demand an advance of 12½ per cent. from May 1, and give the operators until next Tuesday (May 3) for an

This demand was considered by the operators at a special meeting held in Pittsburgh on the 2d inst., and the following reply, which we give in full was drawn up by Secretary Atcheson and forwarded to the representatives of the two labor organizations in the seciet.

"Ever since the unfortunate strike in the Connellsville region, over one year ago, the operators have used every endeavor to prevent a repetition of a disaster that reduced some of their employees to the point of starvation, forcing them to appeal to public charity for food for their wives and children, bringing not only idleness on themselves but on ten times their number of workingmen on the lines of railroads and in blast fur-naces, mills, foundries and shops dependent on Connellsville coke for fuel. This was on Connellsville coke for fuel. This was accomplished by granting practically every demand made upon the operators until the present cost of producing Connellsville coke is very much higher than any other similar fuel in the United States. Each demand made on the operators was coupled with a proposition to submit the same to arbitration cherild it has considered united. proposition to submit the same to arbitration should it be considered unjust or unfair. The last demand made was so manifestly unjust and unfair that the operators decided to submit same to arbitration and abide the result. The arbitrators on the workmen's side were selected by open ballot, and they pledged themselves personally that the action of the board would be biading on their side. The article of agreement for arbitration was signed by the officers of both labor organizations, binding them as it did the operators to abide by the action of the board, or in its failure to agree to accept the ver operators to anote by the action of the coard, or in its failure to agree to accept the ver dict of the umpire. The workingmen's side was ably presented and earnestly argued before the entire board in the presence of the umpire. The board failed to agree, and the case went to an umpire whose reputation for case went to an umpire whose reputation for fair dealing, integrity and justice never has been questioned. The final argument on the workingmen's side was the last paper submitted, and was sent to him by mail when 1500 miles separated him from answer or inquiry on either side. His decision was based on sworn statements and written arguments prepared by both sides. To claim that it was rendered without understanding every fact in the case would be an injustice to those presenting the case to him The decision was that there should be no advance in wages until there was an advance The decision was that there should be no advance in wages until there was an advance on the selling price of coke. Had it been otherwise the operators were bound to comply. As it is, the workingmen, through their representatives, are equally bound. The signed agreement of both labor organizations pledge their honor and good faith of

every member to accept the award. To accept it for the past and formulate a de-mand for an advance immediately afterward mand for an advance immediately afterward is a direct violation of the terms of the agreement and the award of the umpire. It makes the principles of arbitration a farce, and renders impossible in the future any method by which employees can be intelligently advised of the merits of demands for advances or reductions of labor. Reductive drop 1.8 (20.2) Reductive drop 1.8 (20.2) Reductive drop 1.8 (20.2) Penas (20.2) P advances or reductions of labor. Reduction of wages are as often matters of arbitration as advances, and should be as fairly and justly considered. The operators intend to keep the same good faith as they held when they agreed to enter into arbitration, and cannot believe their employees will do otherwise. Should there be any advance in the selling price of coke the decision binds the operators to an advance in wages, but no advance can or will be given until then the disasters of a strike must follow to those who inaugurate same."

On Tuesday afternoon, the 3rd inst., the bloggets of the Amalyamsted Association was be taken to very suppositional to the series of the Amalyamsted Association.

lieved from any responsibility in the matter. From present indications the strike will be bitterly fought by both sides.

### Foreign Markets.

GERMANY.

HOLLAND.

ROTTERDAM. April 27, 1887.—Tin.—From being firm early last week our marvaid has weakened by degrees, winding up at 61,75 guilders for Banca spot and next sale: Billiton spot, 61,375g, and 61,625g July.—Koch at Vicerboom.

BEALS.

Bilbao, April 23, 1887.—Iron Ore.—No contracts have come to pass during the week, the only sales being of single cargoes at rather irregular figures, at 7/6 7/3 for Campanil, and 8/7 at 6/10 Rubbos Superiores. An offer for 6/6 for the latter was rejected, and such has been the case with 10,000 tons Campanil, for which 7/3 was offered and refused; the owner insisting on 1/6. Dry weather has facilitated shipments, of which 121,335 tons

WEST INDIPS.

PORT OF SPAIN, TRINIDAD, April 1, 1887, obditum,—Our market has been moder retire at \$9 for Boiled and \$3 for Crune \$1.

EAST INDIES,

PENANG, March 22, 1887.—Tin—Opening a fort night ago at \$36.69 \$P\$ picul, there was a slight drop to \$59.39 soon after, but subsequently a rally carrying the closing figure to \$36.50. While the receipts amounted to 7500 piculs sales reached \$300 all for Europe. From January 1 to March 14, there were exported from here \$1.314 piculs to England; 1319 to the Continent, and 546 to the United States. Exchange, four months bank, on London, 3.344 \$6.3.79s.—Schmidt, Kustermann & Co.

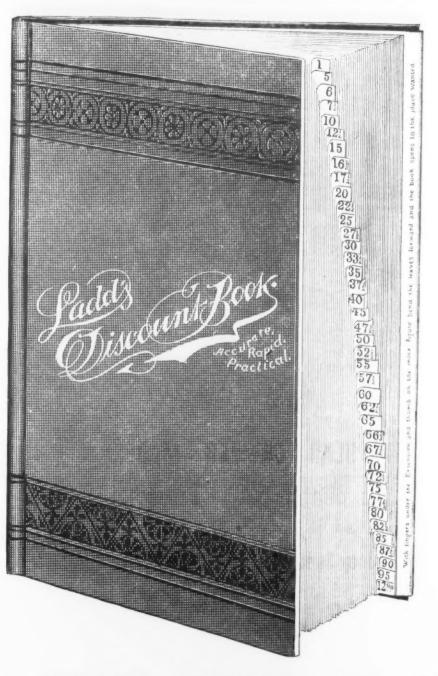
Trade Marks and Labels Bootstered. 15 years experience.

Trade Marks and Labels Bootstered. 15 years experience.

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To say that we are much pleased with Ladd's Discount Book expresses it but very mildly. In our business transactions there

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is no end to the different discounts, and in using your book but a few days we can say that we should as soon think of dispensing with our telephone as to dispense with your book. Money would not buy the copy we have, providing we could not obtain another. We shall recommend it highly to every one who has occasion to use discounts. Worcester Machine Screw Co., Worcester, Mass.

The long-looked-for book has arrived at last. It most fully confirms the complimentary testimony to your "eminence and efficiency in Hardware Literature," and thousands upon thousands will join the glad throng who will rise to bless the Ladd whose most thorough work has done so much to relieve them from "mental strain" and drudgery, and give them the "solid comfort" which they will continually pray may be returned to the author tenfold.

C. T. Salisbury, American Screw Co., Providence, R. 1.

I never saw anything gotten up in better taste and in a more business like manner from beginning to end. You have reason to be much pleased with the book; so have your patrons. It ought to be a success, and no doubt it is. I am well satisfied.

John T. Henry, Hamden, Conn.

We cannot help admitting our surprise, in receiving the book, upon finding it so complete, novel, compact, comprehensive and useful. You ought to be handsomely remembered by the trade in this connection. We shall want several more books later on. J. F. Wollensak, Chicago, Ill.

I can recognize the utility of your work at a glance, and consider it very valuable to any one who has anything to do with discounts. The arrangement of the index to discounts is very complete, and any one can turn to just the discount he wants and find the calculation required, with the satisfaction of knowing that the result is absolutely correct. I have no doubt that your book will reach the second and third edition, and I book will be my constant companion. I most cheerfully and you every success in its sale.

W. L. Sandford, of Morley Bros., East Saginaw, Mich.

the most comprehensive and useful work that we can conceive. We know of nothing to compare with it, because we never saw anything attempted on so large and exhaustive a scale. complete and final, and there is almost nothing we can think of with reference to the tricks of discount that we do not find clearly classified and made simple therein. We are convinced that it must come into general use. We can see that at first novices may think that it is as easy to lick their pencil and figure out their discounts, but such men are wrong, and they must make haste to use the book in all their transactions, or they

will soon find that the world is way ahead of them.

The Wire Goods Co., Worcester, Mass.

After carefully examining your book we pronounce it one of the most valuable books ever issued for Hardware Manufacturers, as well as buyers, and the most important book in our office "library." We trust your labor will be rewarded with the unbounded success it deserves.

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We are greatly pleased with Ladd's Discount Book, and are using it every day. The more we use it the more we appreciate its value, and we can most unhesitatingly recommend it to any one who has anything to do with discounts. It is exceedingly valuable to us in our business,

Howard, Childs & Co., Pittsburgh, Pa.

We judge your book will be found a valuable aid. It is neat and good; well gotten up.

John S. Fray & Co., Bridgeport, Conn.

We pronounce the book a success. It shows a vast amount of patient headwork, and it is very satisfactor Gong Bell Mfg. Co., East Hampton, Conn

conscientiously pronounce it complete and perfect. H. C. Whitcher, of Black Hardware Co., Detroit, Mich. We are well pleased with the Discount Book.

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Samuel C. Tatum & Co., Cincinnati, Ohio.

PLEASED.

I am very much pleased with the Discount Book. It will only be a little while before we will wonder how we ever got along without it.

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We have received the copy of your Discount Book, and are very much pleased with it. It no doubt will prove a very valuable aid to the trade generally

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Ladd's Book is invaluable. It saves us time, and as a check is admirable. Henry Seymour Cuttery Co., Holyoke, Mass.

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IT WILL PAY YOU TO USE

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DAVID WILLIAMS, 66 and 68 Duane St., New York.

May 12, 1887.	,
PHILADELPHIA.	Sad Irons.—4 to 10 D
Lioyd & Supplee Hardware Co. Terms, 30 days. For 60 or 90 days, interest added at 8 per cent. per annum.	Stone.
Anvils. Peter Wright's. The 1946 1946 1946 1946 1946 1946 1946 1946	Washita Axe. ₩ D 15c Hindostan Oil Stone No. 1. ₩ D 45c Hindostan Axe Stone ₩ D
A xea.	Hindostan Silps  Gerews.—Parker list (new list).  Flat Head Iron.  Flat Head Rose.  dis 759
June's Kentucky and Yankee, wook net 57, 52, 53, 53, 53, 53, 53, 53, 53, 53, 53, 53	Round Head Brass dis 65 9 Round Head Iron dis 70 9  Spoons.
	Plated
Snell's Augers and Blt	Britannia, Parker's dis 602106602102102107 Tinned dis 109 SpringsTorrey dis 503 Gem No. Samul Japanned \$2007
Snell's Auvers and Bh.   dis. doi:10.00.5     New Haven Copper Company   dis. doi:10.10     Benjamin Pierce Auger Bits   dis. dis. 20     enninge' Auger Bits   new list Jan. 1, 1884, dis. 25     Cook's Auger Bits and Augers   dis. 55     Snell's Ship Augers   dis. 15 of 20     Watrons Ship Augers   dis. 15 of 20     Bonney'Pat Hot, Augers, list \$48 \( Fdoz dis. 40.810 \)     Steams Pat. Hot, Augers, list \$48 \( Fdoz dis. 20.810 \)	Gem No. 2 medium Japanned 2.75 dis 50&10 9 Coll No. 10 % gross net \$5.50@6.00 Other Standard Springs dis 50&10@60 9
Bonney'sPat. Hot. Augers, list \$48 \( \pi \) doz dis40x10 \( \pi \) Stearns \( \pi \) at Hot. Augers, list \( \pi \) 48 \( \pi \) dozdis \( 20\) 20\( \pi \) dafances.	Warner Door Springs, \$\infty\$ acz. \$2.50. dis 40x10 & 50 9 Standard Spring Hinger— Single No. 0. \$\infty\$ doz. net
Beila. dis. 50 % Beila. Bevin Bros. Mfg. Co. Light Hand Bells dis. 75@75&10 %	Other Standard Spring Hinges. dis 25&10c443 Stocks and Dies. dis 40 & 40&5 Stock Polish.—Gem B gross 34 50 dis 10
Swiss Pattern Hand Bells	Dixon 8.00, dis 105 Fire Fiy 83.00 gross, ne Tucks Combination discount
Boring Machines Upright, without AugersList, \$5.50 } Angular, without AugersList, 6.75dis. 50 \$	Shoe Nails -15, and under 7¢ [10 g
1884	Im. Oneida—Newhouse list. First qual. dis 356.40
Stanley, Wrought Shutter	vises. Solid Box. Trenton new list dis 50, 10%5
	Coes Mechanics dis 55&10&3 9 Coes Mechanics, Mail. Bar. dis 80&10&80&10&50 Wire. Bright or Appealed No. 0.to 18
Marea	Coppered 0 to 18
Cast Fast Joint, Narrowdis 60&5 @ 60&10&5 \$ Cast Fast Joint, Broaddis 60&5 @ 60&10&5 \$ Cast Loose Joint, Narrow	Coppered, 0 to 18. dis 60x 10 s. Thurd Broom Wire dis 60x 10 s. Thurd Broom Wire dis 60x 10 s. Thurd Barb Wire 48x6 Fabried Barb Wire 43x6 Fabried Barb Wire 41x6 Galvanized. Nos. 7 to 18. Market List, dis 61x 5
Cast Fast Joint, Narrow	Writes No. 24. Per dos. Per dos. Postles No. 24. 27.00
Wrought Loose Pin. Wrought Table Hinges and Back Flaps dis 65&5 @ Wrought Loose Joint	Universal, No. 256 27,00 Universal, No. 2 30,00 Universal, No. 114 31,50
Blind Rutte	Universal, No. 116. 36.00 5 Universal, No. 1. 64.00 E Universal, for Set Tubs, A 256. 36.00
Parker         dis. 75&2 €           Care         dis. 75&10&5           Snepard         dis. 75&10           Lull & Porter         dis. 75&10           Hufferge         dis. 75&10           dis. 75&10         dis. 75&10	Universal, for Set Tubs, C 1
Cnsters.—Bed (new list July 8, 1886; Platedis 50 &10@60&5 \$	Wringers Per dos. Per dos. Per dos. Per los No. 286 27.00   Per los No. 286 286   Per los
Chains.—German Halter and Coil, list June, 1884	DITTO DI IDO
Halls - German Haiter and Coll, list State, residence   Galvanized Pump.	PITTSBURGH.
Socket Firmer	TERMS Note or acceptance at #0 days, with current rate of exchange on New York, or a discount of 2 F cent. for cash if remitted within 10 days from date.
Coffee Mills.—Box and Side (new list Jan. L. 1880	The day of the same of the sam
Knterprise. als 200210230 k 'intlery.—Walden Pocket	The following are card rates.  Flat Bar.
facturers' prices net.  Ooor HangersCronk Barn Door HangersNo. 4, \$12,00; No. 5, \$14.00; No. 6, \$18.00 dis. 50&10@50&15 \$  American Parlor Door Hanger\$6.00; dis 20&10 \$	1% to 6 by 1% to 1%2.4¢ %, % and 3% by % to %.2.4¢
American Parlor Door Hanger	Kounds and Squares.
	236 to 4 3.0e 3 to 9-16 2.2e 34 3.0e 336 to 4 3.0e 3 to 7-16 2.4e 3-16 5.0e Oval Iron.
Files.   dis 60&5@60&10 \$   Nicholson	Veal Iron.   2.84   5.   2.   2.84   5.
Crown and Arrow	% to 14 men. 2.7# \$ men. 3.5¢ % to 4 3.2¢ % 10ch 3.5¢ Horse Shoe. 5.0¢
Crown—8 in. roli	54 to 1¼ by 5-16 to 54 inch
Fry Pans.  Burnished	13 at 13 & 143.5¢ by at 11 & 123.5¢  143.5¢ by at 11 & 123.5¢  1541 & 153.5¢  1642 Beauty Bands.
Fry Pans. Burnished	3\(\) to \(\theta\) by \(\) \(\lambda\) \(\theta\) \(\t
Yerges & Plumb's, new list	Light Bands.  1½ to 6 by ½ to 3-162.6¢   ¾ & 11-16 by ½ to 3-16.3.2¢ 1½ to 6 by ½ to 3-162.6¢   ¾ & 11-16 by ½ to 3-16.3.2¢ 1 to 1½ by ½ to 3-162.6¢   ¾ & 11-16 by ½ to 3-163.2¢ 1 to 1½ by ½ to 3-162.6¢   ¾ & 9-16 by ½ to 3-163.2¢ 1 & 1-16 by ½ to 3-16.2.2¢   ¾ & 9-16 by ½ to 3-163.2¢ 1 & 1-16 by ½ to 3-16.2.2¢   ¾ & 16 by ½ to 3-183.2¢ 1 & 10-12 by ½ to 3-16.2.2¢   ¾ by 1 by
Disston Loop Handles Cross-Cut20¢ pair net Boynton Loop Handles Cross-Cut20¢ pair net	1 to 134 by Nos. 11 & 12.2.7# \$ & 9-16 by Nos. 11, 12.3.6# \$ 46 & 9-16 by \$ \text{inch by } 3.6 & 3-163.8# \$ \text{inch by } 3.6 & 3-163.8# \$ \text{inch by Nos. 11 & 12.3.8# } \$ inch by Nos. 11 & 12
Hatchets. Yerkes & Plumb, new list	11/4 to 4 Nos 19 14 18 2 94 1 N Nos 10 and 00
Hay and Straw Kulves. Lightning. \$\Psi\ \dos\$18.00 dfs. 25 \( \) Lightning. \$\Psi\ \dos\$25 \( \) Lightning. \$\Psi\ \dos\$15.00 \( \) Wadsworth. \$\Psi\ \dos\$  \text{to} \( \) Watton Straw Kulves. \$\Psi\ \dos\$  \text{to} \( \) Gem Hay Knife. \$\Psi\ \dos\$  \text{to} \( \)  # doz \$\( \)\$2.00\( \)(312.00\( \))	13 to 2, No. 20. 3.1# 11-16, Nos. 13, 14 & 15, 3.7# 13 to 2, No. 21. 3.2# 11-16, Nos. 16, 17 & 18, 3.8# 13 to 2, No. 22. 3.3# 11-16, Nos. 19 and 20, 3.9#
liinges.	10-10, 1 & 194, NOS, 13, 14 & 15 3.0¢ 11-16, NO, 22 4.0¢ 15-16, 1 & 194, NOS, 16, 17 & 18, 16, 16, 16, 16, 16, 16, 16, 16, 16, 16
Horse Nails. Nos. 5 6 7 8 9 10 Globe 26 23 21 20 19 18 dis 124 25 22 48 Aussie 30 27 25 24 28 22 dis 25 210 &10 &	15-16, 1 & 1½, Nos. 19 & 56. Nos. 19 and 20 4.1¢   20
Pol'ed and P't'd & Blued & P't'd & Blued & P't'd & 12 82 26 25 24 23 dls 25&10&10 \$\frac{1}{2}\$ Cllaton & 23 21 20 19 18 } dts 40&5 \$\frac{1}{2}\$ Saranac & 25 23 91 20 19 18 dis 25&30 \$\frac{1}{2}\$ Locks and Knobs.	10-10, 1 & 19g, Nos. 19 & 22 20,
Saranac 25 23 91 20 19 18 dis 25@30 4 Locks and Knobs. Branford Locks dis 55&5&2 \$	20.
Branford Locks dis 55&5&2 \$ Parker's Cabinet dis 40&2 \$ American Padiocks dis 75&75&5 \$ Scandink vian Padiocks dis 50 \$	13-16, Nos. 16, 17 & 18.3.5¢   4 lnch, Nos. 13, 14, 15, 4.3¢   13-16, Nos. 19 and 203.6¢   5 lnch, Nos. 16, 17, 18.4 4¢   18-16, Nos. 213.7¢   4 lnch, Nos. 19 & 203.6¢   12, 16, No. 213.7¢   15, 16, Nos. 19 & 203.6¢   16, Nos. 19 & 20
American Padlocks. dls 756g75&5 % Scandina-vian Padlocks. dls 50 % \$\psi\$ dos. \$8.00 0.50 0.50 10.00 12.50 \$\text{dis 0.9 } \text{dos.}\$ \$\psi\$ dos. \$8.00 0.50 0.50 10.00 12.50 \$\text{dis 0.9 } \text{dos.}\$ \$\psi\$ dos. \$8.00 0.50 0.00 0.20 0.00 0.00 0.00 0.00 0	14, Nos. 13, 14 and 15. 3.54 1 inch, No. 22 4.86 14, Nos. 16, 17 and 18. 3.64 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Buckeye	1-10f # B extra will be charged for each gauge lighter than the lightest indicated.
Tubular. No. 0, 10. 1007-0, No. 1, 10. 200-0, 10 doz. ner Guards 40f extra.  Lawn Mowers.—Pennsylvania.  Phitadelphia  Excelsior  Continental  Quaker City	specified lengths  Barrel Hoops.  134 to 2 in., cut to length.
Continental Quaker City Lawn and Garden Pumps.	specined lengths    14 to 2 lm, cut to length.
Lawn and Garden Pumps.  Holland Patent	cluding Tire
Molasses tiates. Enterprise Mfg. Co.'s Measuring Faucets.dis. 20210 \$ Stabbling Gates.	No.9 & heavier, 2.8; Plow Slabs, 3.0 Plow Wings, 3.3 Sheet Iron. Common. Charcoal. Juniata.
Lincoln's Gates. dis. 663,8210 \$\frac{1}{2}\$ Landers, Frey & Clark's Petroleum. dis 40,210 \$\frac{1}{2}\$ Brass Ldwor Cocks new list Jan. 1. 1880,dis50x5 \$\frac{1}{2}\$ Cork Lined Cocks. dis. 70 \$\frac{1}{2}\$	No. 9 & heavier, 2.8   Plow Slabs, 3.0¢   Plow Wings, 3.3¢   Baket Iron.   Common.   Charcoal, Junista.     Nos. 10 to 14   3.3¢   4.8¢   6.4¢     Nos. 18 to 21   3.6¢   5.1¢   6.4¢     Nos. 18 to 21   3.6¢   5.1¢   6.8¢     Nos. 22 to 24   3.8¢   5.3¢   6.8¢     Nos. 25 and 26   4.0¢   5.0¢   7.0¢     No. 27   4.2¢   5.7¢   7.2¢     No. 28   4.0¢   6.1¢   7.6¢     No. 28   4.0¢   6.1¢   7.0¢     No. 28   4.0¢   7.0¢
Cork Lined Cocksdis, 70 \$  Ment Cutters. Dixon'sdis, 45 \$  Wooden's dis, 45 \$	Nos. 25 and 20. 4.0¢ 5.5¢ 7.0¢ No. 27. 4.2¢ 5.7¢ 7.2¢ No. 28. 4.6¢ 6.1¢ 7.0¢ All sheets No. 18 and lighter, over 30 inches wide,
	not less than 2.10¢ extra.  Wood's Patent Planished Sheet.
	1st quality (A)
Ideal Apple Parers	(Soho C. H. B.) Brand. Patent Leveled: Nos. 14 to 20.
	Coal Screen Iron.
Ohio and Auburn. dis, 50 \$ Raisey (S. R. & L. Co.). dis, 30&10 \$ Plane Irons,—Ohio Tool Co. dis, 20&10 \$ Butcher's. \$5.00 & 5.25 to \$	Angle Iron. 234, 3, 334 and 4 inch2.8¢ 136 by 1, for Pl. Hand3.3¢ 134, 134, 2 and 234 "2.8¢ 134 by 34 "3.3¢3.3¢
Plumbs and Levels.         dis. 70&10 \$           Stanley's Adjustable.         dis. 70&10 \$           Stanley's Non-Adjustable         dis. 70&10 \$           Picks.—New list.         60&5@60&10 \$	
Lamont Combination # dos \$4.00	8 b to the yard 2.4¢ 20 b to the yard 2.3¢ 12 " 2.3¢ 28 " 2.3¢ 16 " 2.3¢ 28 " 2.3¢ 8 Splice Joints for 12.16 and 20 b Rail, 30¢ each; 28 and 30 b Rail, 40¢ each; 40 b, 50¢ each. 3½ by ½ and ½ Splkes for 20 and 28 b Rail 3.3¢ 2½ and 30 by ½ " 12 and 16 b " 3.5¢ 2½ by 5-16 " 8 B Rail 4.0¢
Lamont Combination	and 30 B Rail, 40¢ each: 40 B, 50¢ each. 3½ by ¼ and ½ Spikes for 20 and 28 B Rail
Stanley   Vory   dls. 60 @50&108	
Per dos. \$8.00 10.25 13.75 15.00 16.75 19.50 Lbs. 50 100 150 200 250 300 Soale Beams00&5ca60&10\$	1½ to 2 by ½ to % inch. 2.5¢ 1½ by ¾ and 7-16 inch. 2.7¢ 1½ by ¾, 7-16 and ½ inch. 3.0¢  Inniata Nail Roda, 6.0¢: Norway Nail Rods, 7.5¢
Squares.	Junista Nail Rods, 6.0¢; Norway Nail Rods, 7.5¢.  Guard Iron, \$4,345% and \$4,345,56.  Guard Iron \$4,356,356 and \$4,354,56.  Junistan Same Same Same Same Same Same Same Same
702 106 702 106 702 106 10 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dropper Bars
Scythes, —Golden Clipper, Damascus Blade, Boxed and Sharpened. — \$\dot o_0\$, dis 40 \$\frac{2}{3}\$ (Clipper No. 10, Bronzed Blade, Boxed and Sharpened	Tool Steel. Classification Adopted April 13, 1886, Steel Association
Saws.—Disston's Hand, Panel and Rig	
Cross-Cut Patent Tooth	97 United States.  ROUND, SQUARE AND OCTAGON.  \$4 to 2 base, 8.0¢   6½ to 7 3.0¢   ½ & 9-32, 3.0¢  \$45 to 3 ext. 1.0¢   7½ to 8 3.5¢   3-16 5.0¢  \$34 to 4 1.0¢   9.16 to ½ 0.5¢   5-32 10.0¢  \$45 to 5 2.0¢   7-16 to ½ 1.0¢   ½ 18.0¢  \$54 to 6 2.5¢   5-16 and 11-32 2.0¢
	FLATS.  S to 9-16 inches wide x S to % inches thickbase. 8.0#

	THE IRON AG
Sad Irons.—4 to 10 b	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Fiat Head Brass dis 70 \$ Round Head Brass dis 65 \$ Round Head Iron dis 70 \$  Spoons.	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Plated	Crucible Steels.  Crucible Steels.  \$ to 3 inches base, 5.00   \$ 5 to 7-46 in extra, 0, 35 to 4 in extra, 0, 50   6 16 and 11 32 in ex. 1 15 to 5 in extra, 1, 0, 0   3 and 9.32 extra, 1, 0   4 and 9.32 extra, 0, 50   6 16 and 11 32 in ex. 1
Standard Spring Hinger	P <sub>1</sub> to 4 in, x No. 4 gauge to 46 in, inc. base, 4 1 and 1½ in, x No. 1 gauge to 4 gauge inc. extra, 0 1 to 2 in, x No. 5 gauge to 7 gauge inc. extra, 0 5, to 3 in, x No. 8 gauge to 10 gauge inc. extra, 1 14 to 3 in, x No. 11 gauge to 46 gauge inc. extra, 1
Geauine Oneida—Newhouse dis 35640 s Im. Oneida—Newhouse list, First qual dis 60.  Visea,—Solid Box, Trenton new list, dis 50, 1025 s Geauine, dis 305 to 25 s Geauine, dis 305 to 35 s Geauine, dis 305 to 36 s Geauine, dis	5 to 15 inches. base, 5.1 c   5-16 in
Galvanized, Nos. 7 to 18 Market List dia 60 4	Dispersion Checken Checken
Wringers. Per doz. Per doz. Per los No. 286. 27.00 Per less No. 186. 286. 286. 286. 286. 286. 286. 286. 2	Bessemer and Open-Hearth Steels.  MACHINERY ROLENS AND SOCIATES.  % to 3 in. incbase. 4.60   ½ to 1.146 inch inc o  Sk to 4 inches inc
PITTSBURGH.  Merchant Iron.  TERMS.—Note or acceptance at 80 days, with current rate of exchange on New York, or a discount of 2 F cent. for cash if remitted within 10 days from date of invoice.  For fluctuations and discounts on card rates see weekly Pittsburgh Trade Report.	13 in and wider x \( \frac{1}{2} \) to 5.16 in thick extra, 0 13 in and wider x \( \frac{1}{2} \) to 5.16 in thick extra, 0 13 in and wider x \( \frac{1}{2} \) to 5.16 in thick extra, 0 13 in and wider x \( \frac{1}{2} \) to 6.16 in thick extra, 0 14 in and wider x \( \frac{1}{2} \) to 16 in thick extra, 0 15 in to 14 in x \( \frac{1}{2} \) to 16 in thick extra, 0 15 in to 14 in x \( \frac{1}{2} \) to 16 in thick extra, 0 15 in to \( \frac{1}{2} \) in thick extra, 0 16 in to \( \frac{1}{2} \) in thick extra, 0 17 in to \( \frac{1}{2} \) in thick extra, 0 18 in to \( \frac{1}{2} \) in thick extra, 0 18 in to \( \frac{1}{2} \) in thick extra, 0 19 in to \( \frac{1}{2} \) in thick extra, 0 19 in to \( \frac{1}{2} \) in thick extra, 0 10 in to \( \frac{1}{2} \) in thick extra, 0 10 in to \( \frac{1}{2} \) in thick extra, 0 10 in to \( \frac{1}{2} \) in thick extra, 0 10 in to \( \frac{1}{2} \) in thick extra, 0 10 in to \( \frac{1}{2} \) in thick extra, 0 10 in to \( \frac{1}{2} \) in thick extra, 0 10 in to \( \frac{1}{2} \) in thick extra, 0 10 in to \( \frac{1}{2} \) in thick extra, 0 10 in to \( \frac{1}{2} \) in thick extra, 0 11 in to \( \frac{1}{2} \) in thick extra, 0 12 in \( \frac{1}{2} \) in thick extra, 0
The following are card rates.  **Flat Bar.* 134 to 4 by 34 to 1 2.0¢ 134 and 134 by 34 to 34. 2.1¢ 144 to 6 by 34 to 1 2.1¢ 1 and 134 by 34 to 34. 2.2¢ 134 to 6 by 134 to 14. 2.2¢ 34. 34 and 34 by 36 to 36.2.4¢	Sies of flats not named in above list shall be on half the extras of same size of Tool Steel. 14 inch and wider x & to 1 inch thick base, 2. Extras same as Flat Machinery extras. THE STEEL, SQUARE EDGES. Throughout the list 0.25 more than for same sizes of
1 to 176	Round Edge Tire, TOE CALK STEEL.  114 inches and wider x % to 1 inch thick base 2. Extras same as Machinery Extras. SLEIGH-SIDE STEEL.
\$\fo\$ 1\fo\$ \\ \frac{\chi_0}{2.3\phi} \right\{ \frac{\chi_0}{2.3\phi_0} \right\{ \frac{\chi_0}{2.3\phi} \right\{ \frac{\chi_0}	1 and 1½ in. x No. 1 gauge to 4 gauge inc extra, 0, 1 to 3 in. x No. 5 gauge to 7 gauge inc extra, 0, 74 fo 3 in. x No. 8 gauge to 10 gauge inc extra, 0, 10 for the state of the
56 to 116 by 5-16 to 74 linch	\$\( \text{in} \) \text{ in } \text{ x} \) \( \text{in } \text{ x} \) \( \text{ x} \) \( \text{in } \text{ x} \) \( \text{ x} \) \( \text{in } \text{ x} \) \( \text{in } \text{ x} \) \( \text
1 to 136 by ½ & 5-16. 2.3¢  1½ to 6 by ½ to 3-16. 2.5¢  ½ to 6 by Nos. 11 & 12.2.6¢  ½ to 6 by Nos. 11 & 12.2.6¢  ½ to 136 by Nos. 11 & 12.2.7¢  ½ to 136 by Nos. 11 & 12.2.7¢  ½ to 136 by ½ to 3-16. 2.6¢  ½ & 21-16 by ½ to 3-16. 2.6¢  ½ & 21-16 by ½ to 3-16. 2.8¢	contract.   ROUND SPRING STEEL
14 to 4, Nos. 13, 14, 15, 28, 6 14 to 2, Nos. 16, 17, 18, 3, 6 14 to 2, Nos. 16, 17, 18, 3, 6 14 to 2, Nos. 19, 18, 18, 18, 18, 18, 18, 18, 18, 18, 18	Double beet it gauge and heavier.  Bould beet it gauge and heavier.  Fork Steel, Open-Hearth or Bessemer.  Rake Steel, Open-Hearth or Bessemer.  Hoe Steel, Open-Hearth or Bessemer.  Serew-Driver Steel Ste
10-10, 1 & 195, NOS. 19 & 20 20. 30, 1 & 196, NO. 21. 3.3 & 26 10-10, 1 & 196, NO. 21. 3.3 & 26 10-10, 1 & 196, NO. 22. 3.4 & 196, NO. 23. 4.3 & 13.4 & 15.4 & 16.5 & 196, NOS. 13, 14 & 15.4 & 196, NOS. 13, 14 & 19	pounds of Steel in one shipment.  MISCELLANROUS,  Axle Billets
1.10s * B extra will be charged for each gauge lighter than the lightest indicated. 1.10s * B extra will be charged for cutting Hoops to specified lengths	Tank Steel & Inch thick and heavier
Sarret Hoops.   13 to 2 im., cut to length.   9 to 11 m, w set of 6 hoops.   3.0¢ 8 m and less than 9 m, w set of 6 hoops.   3.1¢ Less than - m, w set of 6 hoops.   5.2¢ Extras for cutting to length all preceding Iron, including Tire.   L10   Tank Iron.   L10	Shell Steel Plates, 90 Inches to 100 Inches wide, extra on each thickness, 8 Shell Steel Plates, 100 Inches to 105 Inches wide, extra on each thickness, 8 Shell Steel Heads, 95 Inches diameter to 105 Inches diameter
Common   Charcoal   Juniata	diameter. A carried on each thickness, is considered to the carried on the carrie
1st quality (A)	Flange Steel Heads, 95 inches diameter to 195 inches diameter.  — extra on each thickness, 18 linches diameter to 195 inches diameter Steel Heads, 105 Inches diameter to 198 linches diameter to 198 linches diameter.  — extra on each thickness, 18 lest Bolier Steel, 15 inch thick and heavier 50,000 to 70,000 pounds tensile strength  — base, 18 lest Bolier Steel, 3-16 inch thick, 50,000 to 30,000 pounds tensile strength  — extra, 0.3 lest Bolier Steel, 8 gause and 9 gauge thick, 50,000 to 70,000 pounds tensile strength  — extra, 0.3 lest Bolier Steel, 8 lest Bolier Steel, 8 gause and 9 gauge thick, 50,000 to 70,000 pounds tensile strength  — extra, 0.3 lest Bolier Steel, 8 l
3.34 and 4 inch2.86   1½ by 1, for Pl. Hand. 3.36   1½ 134 2 and 2½ "2.86   1½ by 1, for Pl. Hand. 3.36   1½ 134 2 and 2½ "3.81   1½ by 1, "3.86   1½ inch2.96   1½ by 1, "3.86   1½ inch2.96   1½ by 1, "3.86   1	Best Boller Steel, 8 gause and 9 gauge thick, 30,880 to 70,000 pounds tensile strength extra, 0.5 Best Boller Steel, 10 gauge to 12 gauge thick, 50,000 to 70,000 pounds tensile strength extra, 0.7 Best Boller Steel Plates, 90 inches to 100 inches wide, extra on each thickness, wide extra on each thickness, wide extra on each thickness, 9 Best Boller Steel Heads, 95 inches diameter to 105 inches diameter extra on each thickness, \$1 Best Boller Steel Heads, 155 inches diameter to 105 inches diameter extra on each thickness, \$1 Best Boller Steel Heads, 105 inches diameter to 108 inches diameter extra on each thickness, \$1 Best Locomotive Fire-Box Steel
3½ by % and ½ spikes for 20 and 28 m Rail.     3½ and 3 by % "12 and 16 m" 3.5 d       2½ and 3 by % "12 and 16 m" 3.5 d     2½ by 5-16 "8 m 8 m Rail.     4.0 g       2½ by 5-16 the Rails.—Punched and Countersums.     1½ to 2 by ½ to % Inch.     2.5 g       1½ by ½ and 7-16 and ½ inch.     2.7 g       1½ by ½ 1-16 and ½ inch.     3.0 g	Amidon's Corner Brace.
114 by %, 7-16 and 14 inch	WE MANUFACTURE 8 Different Styles BIT BRACES. Our BARKER BRACE is made in 4 grades, and our RATCHET BRACE
Classification Adopted April 13, 1886, Steel Association of United States.  ROUND, SQUARE AND OCTAGON. 54 to 2. base, 8.0¢ 184 to 7. 3.0¢ 14 & 9-32, 8.0¢ 24 to 3. ext. 1.0¢ 714 to 8. 3.5¢ 3-16. 5.0¢ 34 to 4. 1.5¢ 9-16 to 14. 0.5¢ 5-32, 10.0¢ 44 to 5. 2.0¢ 7-16 to 14. 1.0¢ 14. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	in 3 grades, the cheapest finish being just as substantial as the best. Send for Catalogue.  AMIDON & WHITE,  135 & 137 Main St., through to 10, 12 & 14 Quay S

	List of Extras With.
	16 x 3-16 20.0¢   5-16 x % to % 1.5
ŧ	18 x 14
	58 x 54
	58 X 9: 0.10 7 2.0¢ 298 to 8 1.00
	3.46 x 14
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	3-16 x 7-16 to 5g 2 c 25g to 3 x 55g to 8 1.5
	3-16 x 11-16 to 2 1.5¢ 38 to 4 x 38 to 6. 1.5 3-16 x 214 to 7 1.0¢ 214 to 4 x 614 to 8. 2.0
Ē	3-16 x 718 to 8 2.00 418 to 5 x 418 to 7. 2.0
3	14 x 5-16 to 34 2.01 414 to 5 x 714 to 8 2.5 14 x 7-16 to 54 1.50 514 to 6 x 514 to 8 2.5
è	1 to x 11-16 to 2. 1 3e 1 fts to 7 x 6ts to 7
E	14 x 214 to 7 1,0e 014 to 8 x 714 to 8
į	I tutting to multiples of specified lengths, but it is
6	for over 24 in.; under, according to contract.  Crucible Steels.
6	## CRUCIBLE MACHINERY, ROUNDS AND SQUARES. ### to 3 finches
9	\$4 to 3 inchesbase, 5.0¢   36 to 7-16 inextra, 0.5
E	418 to 5 inextra, Lec 14 and 0.32extra, 1.5
5	03 to 6 in extra, 1.5¢ 3-16 inchextra, 1.5 3-16 inchextra, 3.0
9	Octagons, 156 extra, 1.02 of the list. Flats, one half the extras of the Flat Tool Steel classification Cutting to multiples or specified lengths, 156 per pound for anything over 21 inches tong. For length 24 inches or less, according to to special contract.
į.	Cutting to multiples or specified lengths, be pe
Ę	pound for anything over 21 inches long. For length
1 2	CRUCIBLE SPRING STEEL, FLAT.
4	14 to 4 in. x No. 4 gauge to 4 in. inc
K	1 to 3 in. x No. 5 gauge to 7 gauge inc extra, 0 5
É	1, to 3 in x No. 5 gauge to 10 gauge tine
ı	% to 3 in. x No. 17 gauge to 20 gauge Incextra. 3,5
	34 to 54 in. x No. 17 gauge to 20 gauge incextra. 4.0
1	36 to 36 in. x No. 21 gauge to 24 gauge incextra, 6.0
F	
Į.	5% to 156 inches, base, 5.00   5-16 in extra, 1.0
Ē	ROUND AND SQUARE CRUCIBLE SPRING STEEL.   58 to 116 Inches., base, 5.00   5.16 In
	CHICCHLE SHEET STEET TOOL OF THE
	CRUCIBLE SHEET STEEL, TOOL GRADE. TO 21 gauge base, 0.0c; 22 gauge, extra, 1.0c; and 1 advance of extra for every No. of gauge to No. 26, Spring Sheet Steel
3	advance of extra for every No. of gauge to No. 26, Spring Sheet Steelbase, 7
	Common Sheet Steel base, 6
	CRUCHULE CIRCULARS, hase, 4
E	Diameter. Diameter.
	To 46 inchbase, 11¢ + 56 to 60 inchextra, 548 inchextra, 1¢ + 62 to 64 inchextra, 750 inchextra, 2¢ + 66 to 70 inchextra, 9
	50 inch extra, 2c 66 to 70 inch extra, 9 52 to 54 inch extra, 3c 72 inch extra, 11
	Bessemer and Open-Hearth Steels
	MACHINERY ROUNDS AND SQUARES.
	Extra. ' % to 7-16 inch inc0,3   3% to 4 inches inc0,3   5 16 and 11-32 in. inc0,5
	43% to g inches inc1.0e   14 and 9-32 inch inc0,7
	Machine cutting to specified lengths, 12 to 24 in 0.4
	according to contract, but not less than 0.6c extra
	on each size. Shearing or sawing, one half of the above extras for cutting.
	MI A COLLEGE STREET, NAME & STREET
	114 in. and wider x % to 1 in. thick
	114 in. and wider x 3-16 and 7-32 in. thick. extra, 0.2
	14 in. and wider x 1/4 and 5-32 in thickextra, 0.3. in. to 11/4 in. x 1/4 to 1 in. thickextra, 0.3.
	% in. to 11g in. x 3 16 and 7 32 in. thickextra, 0.3
	36 In. to 56 in. x 54 to 56 in. thickextra, 0.3
1	36 in. to 36 in. x 3-16 and 7.32 in. thickextra, 0.5
1	% in. to 11/2 in. x 1-16 and 3-32 in. thick extra, 2.0
	113 in, and wider x 3g and 5-32 in thickextra, 0.3 in in, to 15g in, x 5g to 1 in, thickextra, 0.3 in in, to 15g in, x 3g to 1 in, thickextra, 0.3 in, in, to 15g in, x 3g and 5-32 in, thickextra, 0.3 in, in, to 5g in, x 3g and 5-32 in, thickextra, 0.3 in, in to 5g in, x 3g and 5-32 in, thickextra, 0.3 in, in, to 5g in, x 3g and 5-32 in, thickextra, 0.3 in, in to 5g in, x 3g and 5-32 in, thickextra, 0.7 in, in to 5g in, x 3g and 5-32 in, thickextra, 0.7 in, in to 5g in, x 3g and 5-32 in, thickextra, 0.7 in, in to 5g in, x 1-16 and 3-32 in, thickextra, 0.7 in, in to 5g in, x 1-16 and 3-32 in, thickextra, 1.0 in, in to 5g in, x 1-16 and 3-32 in, thickextra, 10 in, in to 5g in, x 1-16 and 3-32 in, thickextra, 10 in, in to 5g in, x 1-16 and 3-32 in, thickextra, 10 in, in the context in the conte
	half the extras of same size of Tool Steel.
J	THE STEEL, ROUND EDGES.  4 inch and wider x % to 1 inch thick base, 2.8 Extras same as Flat Machinery extras.  The STEEL, SQUARE EDGES.  Throughout the list 0.25 more than for same size of
	Extras same as Flat Machinery extras.
1	Throughout the list 0.2¢ more than for same sizes of
j	Round Edge Tire,
	Throughout the list o.2¢ more than for same sizes of Round Edge Tire.  134 inches and wider x % to 1 inch thickbase 2.6 Extras same as Machinery Extras.
	Extras same as Machinery Extras. SLEIGH-SHOE STEEL.
	114 Inches and Wider x 34 to 1 Inch thick hase. 2 7.
	PRING STEEL FLAT.
	Extras same as Machinery Extras.  14 to 4 in. x No. 4 gauge to 56 in. Inc
	1 to 3 in. x No. 5 gauge to 7 gauge incextra, 0.5
1	14 to 3 in. x No. 11 gauge to 16 gauge incextra, 1 0
	4 to 3 tn. x No. 17 gauge to 20 gauge foc extra, 3.50
	% to % in. x No. 17 gauge to 20 gauge the extra, 5.00
	% to % in. x No. 21 gauge to 24 gauge inc extra, 6.0
	and over, 0.1¢ per pound extra; and under, by special
1	contract.  ROUND SPRING STEEL
	% to 1% inches. base, 3.0¢   5-16 inchextra, 1.06
1	% to 7-16 inextra, 0.5e
1	14 gauge thick and heavier has 2 2.
	15, 16 and 17 gaugeextra, 2;
1	Rounds, % diameter and heavier
1	Rounds, smaller sizes, extras same as Machinery.
1	Double bevel, thinner than 14 gauge extra, 16
	Fork Steel, Open-Hearth or Bessemer 3.2.
1	Hoe Steel, Open-Hearth or Bessemer
1	Auger Bit Steel, Open Hearth or Bessemer.
1	Plow Slabs, Open-Hearth or Bessemer
1	Shapes subject to special agreement, but at prices no
	less than Rounds of same weight & foot.
1	and over, 0.1¢ per pound extra; and under, by special contract.  ROUND SPRING STEEL.  \$4 to 13¢ inches, base, 3.0¢   5-16 inchextra, 1.0¢   50-16 inch
1	
	Axle Billets2 ¢ Thrasher Steel
1	Grain Drill Bars2160 Rolled Ham'r Billets 256
	Axle Billets
1	Rolling Coulter Blanks, cut and punched
1	MA TO ALCOHOL TO AND AND AND AND
1	Plate Steel.
. P	Tank Stool Li fuch thick and heavier hase was

***	Ovals and Half Ovals. Half Rounds and Special Shapes subject to special agreement, but at prices not less than Rounds of same weight # foot.  No freight allowance shall be made on less than 500 pounds of Steel in one solipment.
	MISCELLANEOUS,
*****	Axle Billets. 2 ¢ Tarasher Steet. 2kg Scythe Back Steet. 3 ¢ Thrasher Teeth. 3kg Grain Drill Bars. 2kg Rolled Ham'r Billets 2kg Grain Drill Points. 3kg Cutter Shoe, cut to learths and tapered. 3c Rolling Coulter Bianks, cut and punched. 6c Terms.—Four months' 3 per cent. discount for cash if remitted within 30 days.
0	Plate Steel.
000000	Tank Steel ¼ inch thick and heavier
00	tensile strength. extra, 0.3¢ Shell Steel, 8 gange and 9 gauge thick, 50,000 to 60,000 pounds tensile strength. extra, 0.5¢ Shell Steel, 10 gauge to 12 gauge thick, 50,000 to 60,000 pounds tensile strength. extra, 0.7¢ Shell Steel Plates, 90 inches to 100 inches wide.
¢	extra on each thickness, 46 Shell Steel Plates, 100 inches to 105 inches wide,
0	extra on each thickness, 56¢. Shell Steel Heads, 95 inches diameter to 105 inches diameterextra on each thickness, 56¢
e	Shell Steel Heads, 105 Inches diameter to 108 Inches diameter
0	60.000 pounds tensile strengthbase.El.5d
0	Flange Steel, 3-16 inch thick, 50,000 to 60,000 pounds
e	tensile strength. extra, 0.3¢ Flange Steel, 8 gauge and 9 gauge thick, 50,000 to
e	60,000 pounds tensile strengtnextra. 0.5¢ Fiange Seeel, 10 gauge to 12 gauge thick, 50,000 to 60,000 pounds tensile strengthextra. 0.7¢ Flange Steel Plates, 30 inches to 100 inches wide,
6	60.000 pounds tensile strength extra. 0.76
	Flange Steel Plates, 80 inches to 100 inches wide, extra on each thickness, 4g Flange Steel Plates, 100 inches to 105 inches wide, extra on each thickness, 5g¢
	Flange Steel Heads, 95 inches diameter to 105 inches diameterextra on each thickness, 166 Flange Steel Heads, 105 inches diameter to 108
808	Flange Steel Heads, 105 Inches dameter to 105 inches dameter extra on each thickness, 14 Best Boller Steel, 14 inch thick and heavier 50,000 to 70,000 pounds tensile strength base, 14 Best Boller Steel, 3-16 inch thick, 50,000 to 70,000 pounds tensile strength extra, 0.36 Best Boller Steel, 8 gauge and 9 gauge thick, 50,000
	Rost Roller Steel. 10 gauge to 12 gauge thick, 50,000
000	to 70,000 pounds tensile strenghextrs, 0.78 Best Boiler Steel Plates, 90 inches to 100 inches wide, extra on each thickness, 46
	Best Roller Steel Plates, 100 inches to 105 inches wideextra on each thickness, 36¢ Best Boiler Steel Heads, 95 inches diameter to 105
8000	inches diameterextra on each thickness. 16 Best Boiler Steel Heads, 105 inches diameter to 108 inches diameterextra on each thickness, 16 Best Locomotive Fire Box Steel

Heads, when not in complete Boller sets, to be 54% per pound extra on each above grade, thickness and size. No Steel to be sold as Marine Boller Steel except Best Boller grade. Tank Steel, not stamped, 14% per pound less than Shell Steel, subject to same classification.

Window Gluss.

### Miscelluneous Cast Steel

STANCE AND HEAD	is cust citeti.
Augerand Auger Ht 3¢ Axle Steel for carriages and wagons 3g Frog Points & Plates bige Frog Side Bars 5¢ Pick, plain chammered. 5¢ Pick and Mattock, bev- eled trolled) 3¢ Skate Steel 45¢ Pike and Cant Hook 7¢ Coal & Granite Wedge 7¢	Boller Spindle, subject to Ma chin'y classification. 54 Trap Spring Steel Forged Crabk Pins and Lathe Spindles 7 Platon Rods, plain Platon Rods, plain. Platon Rods, plain. Platon Rods, plain. Do., forged to shapes.
	ST STEEL.
Square. Round. Half Rnd and Flat Bastard, 8 ln. and over.	Mill Saw, 8-In. and over Taper, 316-In. and over Horse and Shoe Rasp
Spiral, Taper, cut to length Solid Safe Cast Steel.	

loe, Crucible 5¢ C	ruc. Plow St'l in Slabs.
Rolls and (	lastings.
urnace and Floor Plates and Rolls over 12 Inches dia and Rolls 12 Inches diamete	meter219
toll Pinions over 12 inches d toll Pinions 12 inches diame	lameter
-Tooth Pinions additional .	

neezer Castings... neezer Pinions and Wheels.

### White and Red Lead.

ount,	70&10 \$ Single Strength 70&10 \$: Price current P box of 50 feet. Single Strength.	Double

United	Sizes,	AA.	Α.	В.	o.
22					
25	6 x 8 to 10 x 15.	\$8.75	88.00	87,50	87.0t
40	11 x 14 to 15 x 24.	DEDO		8.75	8.00
50	16 x 24 to 20 x 28.	12.30		10.25	97, 136
54	15 x 34 to 24 x 30.	13.25		10.75	9.56
(31)	26 x 28 to 24 x 36.	14.50	12.00	11.50	10.27
70	26 x 36 to 26 x 44,	15.00	13,50	12.25	11.06
80	26 x 46 to 30 x 50.	105.75	15,25	13.75	11.77
26-8	30 x 52 to 30 x 54	17.00	16.09		
(30)	30 x 56 to 34 x 56,	19 25	17,30	15.75	
202	34 x 58 to 34 x 60		18.75		
100	36 x 60 to 40 x 60,		20175	18,50	
	Double Strength.				
25	6 x 8 to 10 x 15		12.00	11.00	10.00
	11 x 14 to 15 x 24	15,50		13,00	12.00
4.8	16 x 24 to 20 x 28		17.75		
54	15 x 34 to 24 x 30				
(30)	26 x 28 to 24 x 36				
70	26 x 36 to 26 x 14	2 000		10,00	
501	25 x 46 to 30 x 50,	25.00	23.00	20,50	
84	30 x 52 to 30 x 54	295,50		20,00	
90	30 x 56 to 31 x 56,			231,500	
19.0	35 x 58 to 34 x 60,	31,50	29,00	26,00	7 1

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	Axes, Double Bit, Lippincott per doz., \$15	8.10
	Axes, Double Bit, James & Co per doz. 10	) ()(
	Drain Tools, list	5 1
	Hoes, Planters' and Scovill Pattern	10.5
	Hoes, Handled, Square Eye, Germandis	11 1
,	Handles, Cross Cut per doz., g	1.0
	Handles, Shovel, Bent, Bored, Riveted per doz., 2	2.00
	Saws, Circular dis 5	10. 1
	Saws, Longdfs 4	5 1
	Saws, Cross Cut. H. B. & Co., Champton, foot net, \$0	1.2
9	Saws, Cross-Cut, Lippincott, Champion, foot net. \$6	1,3:
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٠	Spades, list dis 20% 719%	5 5
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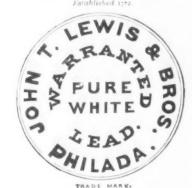
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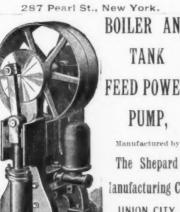
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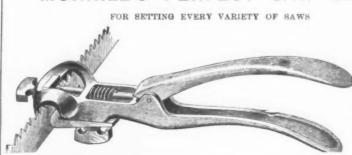
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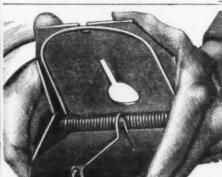
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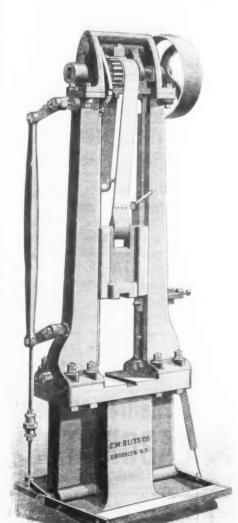
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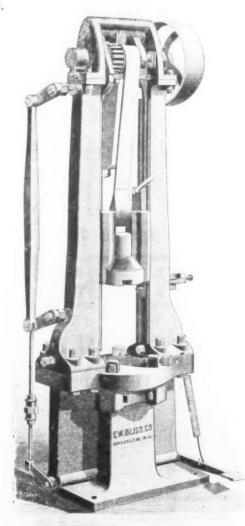
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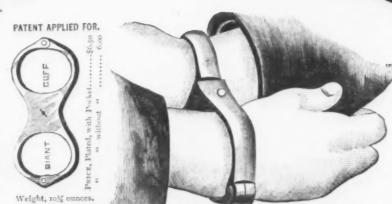
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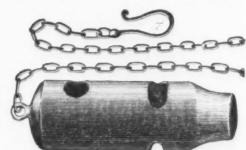


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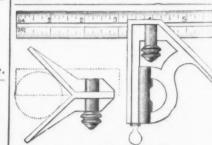
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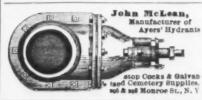
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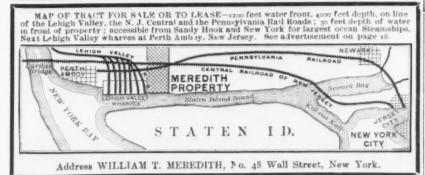
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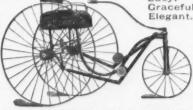
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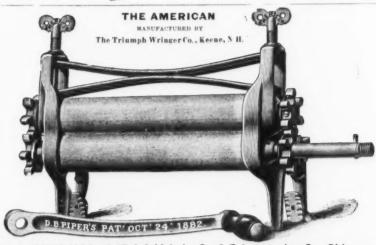
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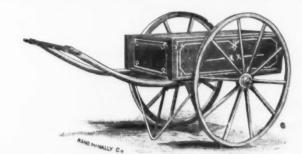
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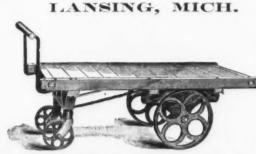
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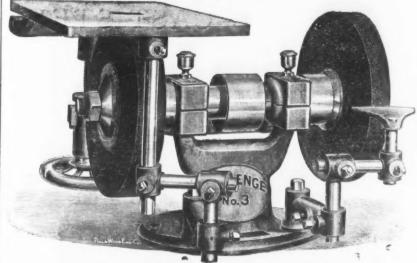


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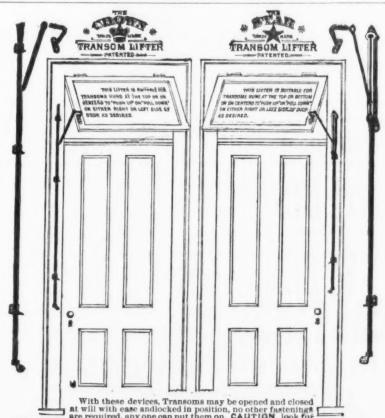
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44 45 43%	5	44	64	81.5.5 B	69	0.75	1000.	85	5	66	Nickel	Blot-d	0.90
4436	4	6.0	6.0	Niekel P	44	2.00		831/4	4	44	0.0	8.0	2.25
451/2	5	1.0	60	9.6	44	0 05		8514	5 **	64	8.6	84	2.50

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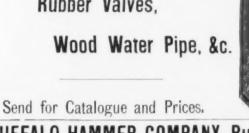


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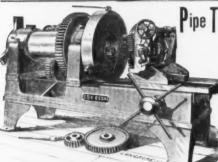
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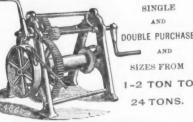
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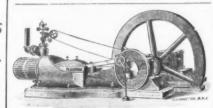
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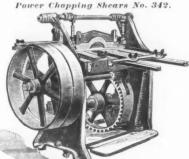
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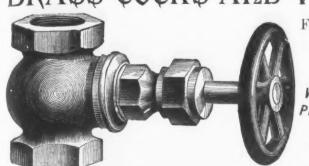
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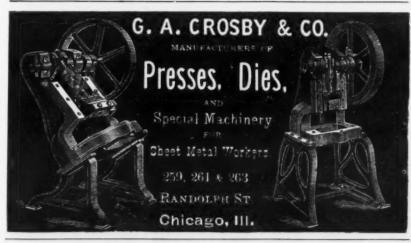
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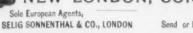
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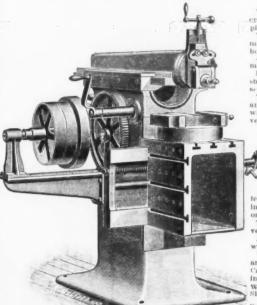
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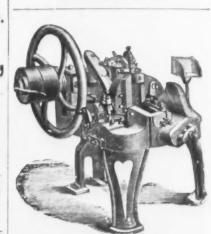
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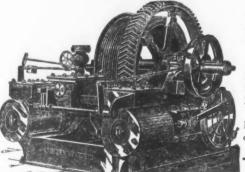
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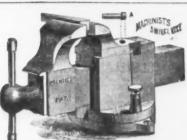
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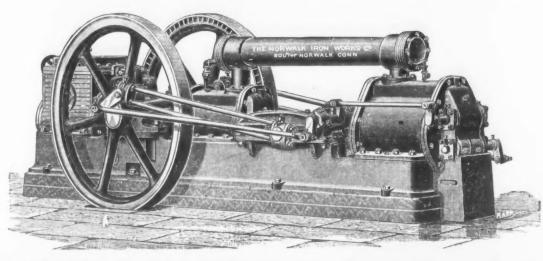
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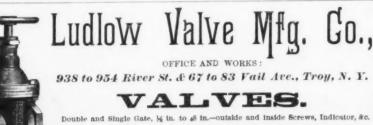


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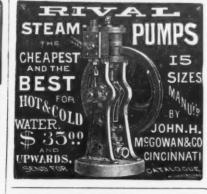
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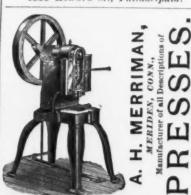


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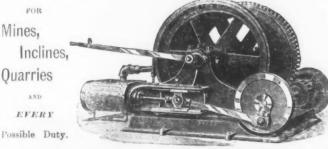
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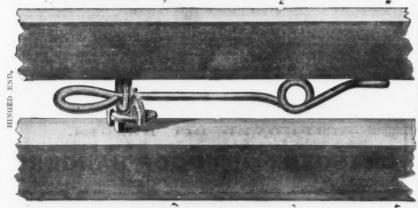


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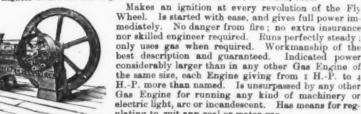
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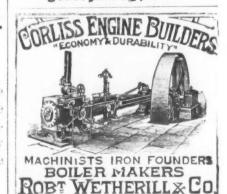
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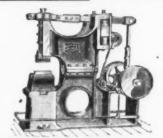
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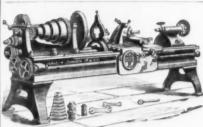
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